PULP & PAPER

SEPTEMBER 1947
Vol. 21 No. 10
Member Audit Bureau of Circculations
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The Production and Management Journal Covering North America's Wood Pulp, Paper, Paperboard and Cellulose Industries
by MILLER FREEMAN PUBLICATIONS, INC.

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SUBSCRIPTION—For 1 Yr., inc. North American Review Number—$3 in U. S. and Canada, $4 in other countries. For 2 Yrs., $5 in U. S. and Canada; $7 in other countries.

"The Cellulose Age"

EDITORIALS

The Alternative Is Not Pretty

IN the top management circles of this industry, a nimble individual with a pencil has figured out if U. S. paper manufacturing ever drops off to 75% of capacity, the mills might as well close their gates. The investors would lose their shirts and lose heavily if they tried to function on that basis.

About 10% of the wood used in this industry comes from the Dominion of Canada. If that 10% were kept north of the International line, that would mean a precarious decline toward that magic 75%. A few things might happen that would continue the decline, but we won't go into that here. We only wanted to express a few thoughts about pulpwood.

Canada has been shipping pulpwood to the United States for just two reasons. Cutting pulpwood for U. S. mills has provided employment and is a sort of unemployment insurance in bad times. The sales of wood bring foreign exchange to Canada. At least one of these reasons is not particularly urgent right now.

Canada wants its own manufacturing industries, to bring more wealth and to create more and better paying jobs and it wants to convert its own resources to consumer products. That's not an unnatural desire.

Where else could American mills look for wood? Not Alaska. The Forest Service had decreed that wood must be processed in Alaska before it leaves the territory. Secretary Krug of the Interior Department only recently seconded that motion.

Russia's a question mark, despite that historic suggestion that the late Wendell Willkie made to the Russian commissar about swapping pulpwood for American machinery, etc., and the only other place where coniferous woods are available—Scandinavia—wants all it has and more for its own mills.

There's only one other place from which any appreciable increase in the pulpwood supply for American mills is possible. That's from the 4,000,000 small wood lot owners of the United States, who own 57% of the industrial timberlands of the nation.

Colonel W. B. Greeley, director of the American Forest Products Industries, Inc., educational agency of the industries, and former U. S. Chief Forester, says that if the good forestry practice generally practiced in larger operations was also pacticed by these small owners, the U. S. timber crop could be doubled.

There's a magic figure to shoot for if there ever was one. Two times the present 15 to 16 million cords of pulpwood produced annually in the U. S. is a lot of wood.

What's the alternative? Increased competition especially for Southern and Pacific Coast timber. Mills raiding other mills' "territory." Going across state lines. More Northern mills moving into the South. Anyway you look at it, the alternative isn't a very pretty picture.

Oh, yes, there's one more alternative. A new synthetic fiber or papermaking material. But as long as much more cellulose can be grown on an acre of trees than on any other kind of an agricultural acreage, trees are probably going to be the principal source of fiber for paper, rayon and some plastics for a long time to come.

How often has the American tourist, traveling through an ugly waste of stumplands, cursed the big timber owner. How seldom has he investigated to find out the owner is, instead, a small farmer or small land owner who has failed to learn the lessons of good forestry . . . lessons that would mean wealth to him.

PULP & PAPER Grows

With this issue we present a bigger and—we believe—a better PULP & PAPER. We have no intention of heralding this event with excess verbiage. PULP & PAPER speaks for itself. It had its beginnings 20 years and seven months ago as a regional publication. It is still carrying on with the distinctive, authoritative, "in-the-field" type of original regional reporting and editing begun then.

The pulp and paper industry of North America is regional in character and PULP & PAPER has merely carried its time-proven methods into each and every region of this far-flung industry in bringing its readers original "on-the-spot" reports of important developments. Although regional in character, each segment of this industry is interested in each other segment for many very strong reasons—because of vital sources of pulp supply or equally vital markets for pulp, because of management and financial ties, and even because of sentimental and personal ties.

A Suggestion

Here's a suggestion to mill libraries and technical departments and others who annually bind the volumes of PULP & PAPER. We realize our new larger size poses a minor problem. But there are at least two ways of solving it:

(1) Bind the North American Review Number and the other smaller size issues already published this year in one volume and then add the last four issues of 1947 to the 1948 volume, or:

(2) Trim margins of the last four issues of this year so that they will be virtually the same size page as previous issues and thus fit nicely in the same binding. Careful trimming could bring page depth to the same as previous issues and page width to within ¼-inch of the width of previous issues.

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WHAT'S DOING IN MAINE

Improvement and Expansion

The great wooded State of Maine was busy last month, and not just with the usual influx of summer visitors. Its pulp industry—second in the U. S.—was showing new developments totaling many millions of dollars, and its paper industry was booming along to feed the presses of newspapers, magazines, and the ever-expanding advertising industry. On a trip through Maine in recent weeks, a staff member of **PULP & PAPER** found the farthest north New England mills in healthy shape and growing healthier.

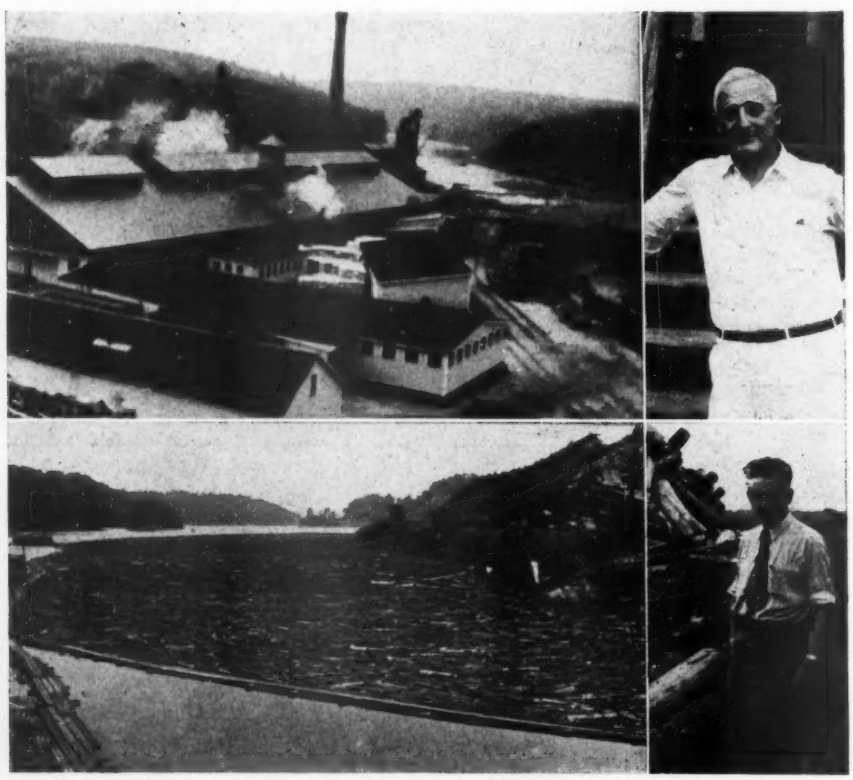
One of the chief interests in improvements at Oxford Paper Co., Rumford, is this organization's developments in the new soda black liquor recovery system now under construction.

This big mill has long been an important factor in the world of publishing, furnishing as it does a considerable percentage of magazine and book papers, as well as stock for covers, offset, roto, and lithograph work. Its pulp operations include both sulfite and soda pulping with a complete Thorne bleach plant. Already a leader in coated papers, the Rumford operation runs nine single coater machines and three double coaters at the present time.

S. D. Warren Program

The S. D. Warren Co., Boston, is completing an extensive $6,000,000 improvement program at its operations at Cumberland Mills where John E. Hyde is general manager as well as vice president of S. D. Warren. After a visit to the mill in Maine, **PULP & PAPER** was authorized by George Olmsted, Jr., president, to say that the Maine improvements include extensive power plant developments, rebuilding of a number of paper machines for greater efficiency, additions to the paper mill itself, and the completion of the new CE recovery unit which was the pioneer unit in the soda pulp industry.

PICTURES TAKEN BY PULP & PAPER, on Main tour:
Upper left: General view of Pejepscot Paper Co., Burnswick, Me., taken from atop pulpwood pile. Upper right: EDGAR CATLIN, Pejescot's Vice President and Manager. Lower left: Looking up the Androscoggin from Pejepscot mill, showing pulpwood in booms. Lower right: H. E. PRATT, Superintendent of the Pejepscot mill.



The recovery unit at this mill is one of two installations in Maine which are said to be the first high-pressure soda recovery units that embody the tall vertical type of furnace design. It is part of an initial installation in a revised steam and by-product set-up. It consists of the following: High pressure chemical and heat recovery steam generating unit, back pressure turbine generator, together with auxiliary equipment and housing facilities. The boiler by Combustion Engineering is of the four-drum bent tube type with water walled furnace.

Pejepscot Paper Co.

When the staff member reached Brunswick he found the town and the mill—Pejepscot Paper Co.—saddened by the sudden death of Worthen Brawn, general superintendent and national TAPPI president (see page 48b August **PULP & PAPER**) but operations were being carried forward with the efficiency in which he had taken a hand for the past 25 years.

Pejepscot is now a Hearst enterprise and the president is R. O. Sternberger, experienced in the industry, with headquarters in New York. Vice president and general manager is Edgar Catlin who with E. R. Comee, chief engineer, and the late Mr. Brawn, have been associated with the mill for a quarter of a century. Operations are divided into the Brunswick mill now devoted entirely to the finishing of school supply papers and other specialty papers; and the newsprint operation at Pejepscot, five miles up the Androscoggin River. Manufacture of the specialty grades now takes place at Pejepscot (rather than Brunswick) where H. E. Pratt is mill superintendent. But chief production these days is newsprint.

The mill made history more than a year ago when it returned to newsprint—after purchase by Hearst—after several years of following the New England trend away from newsprint into specialty and book grades. It seemed literally to stop the trend, for since the Hearst conversion there have been no further mills abandoning newsprint for book grades.

In a picturesque setting on the Androscoggin the historic mill (it was completed in 1893) is equipped with seven 1,000-pound beaters, three 2,000-pound beaters, four jordans, one 94-inch Fourdrinier, one 124-inch machine, and another 144 inches. The smallest machine is used on specialty grades which are sent to the Brunswick finishing department, while the other two produce newsprint to the

tune of 100 tons per day. Water, steam, and electricity are used for power, the old water-power set-up being in perfect order. Although much of the equipment is old, the mill is a model of efficiency and "good housekeeping."

Pulp operations consist of a complete groundwood mill with eighteen grinders, nine wet machines and nine feltless machines. Capacity here is 180,000 pounds every 24 hours. A new 50-ton tank for slush pulp is now being installed adjacent to the mill.

Pejepscot is one of the few mills in the U. S. now making a complete line of specialty color papers for school use.

MORE VIEWS AT PEJEPSCOT PAPER CO., Brunswick, Maine:
Upper left: The 144 and 124 inch machines recently converted back to newsprint for Hearst papers after several years on specialties.
Upper right: Two Norton grinding wheels ready for unpacking.
Lower left: Construction of new 50-ton tank for slush pulp which is now stored as shown. The tank has to be set into the solid rock on the bank of the Androscoggin. Lower right: Pulpwood pile.

Hormones Made From Sulfate Pulp By-Product

The Swedish Pulp Co. has recently begun manufacture of phytosterol as a by-product of the manufacture of sulfate pulp from Swedish pine. The phytosterol group serves as a basic ingredient for the manufacture of many remedial agents, including hormones.

The finished product of the Swedish company seems capable in many cases of replacing cholesterol, at present difficult to obtain from its usual source, the spinal cord of calves.

SENATE'S STREAM BILL
Only Reaches House Committee

By January of this year there were five bills in the 80th Congress relating to stream improvement in the U. S. Before the closing sessions there were seven. Now that Congress has gone home a review of the situation is in order.

Latest action of Congress on stream improvement was the passing by the Senate of S.R. 418 and its referral to the House committee on public works. This is the only one of the seven bills on which any action was taken.

S.R. 418 is the Barkley-Taft Water Pollution Control Bill which went through extensive hearings and came out with several amendments providing for federal assistance in abatement problems by federal second lien-loans rather than grants-in-aid Amendments also provided for federal enforcement only after "all efforts by state authorities have been exhausted" and then only by state consent. Also, the bill now provides for placing the administration of the federal loans under the Federal Works Administration rather than under the Federal Security Administration as provided in the original bill. Putting the Surgeon General's plans into physical effect would also be under FWA.

Amendments affecting section 2-d of the bill (the section which caused the most shooting in the hearings) appear to represent a compromise between the views of those who believe that the activity of the government should be limited to financial aid and study, and those who were for immediate and drastic action on pollution abatment.

The hearing committee recognized that certain industries, notably pulp and paper, have been giving much attention to perfection of measures and that thus far no absolutely feasible solution has been found. Cognizance was given also to the possibility of unfavorable economic effects of any immediate and drastic efforts to clear up pollution.

As section 2-d now stands there is a provision that where there is a failure to abate pollution, or a failure of State agencies to institute suit to abate it, the federal securiy administrator may call a public hearing before a board of five persons appointed by him. The person causing the pollution will have ample time to comply with the board's recommendations. If he fails, the administrator may—but only with the consent of the state water pollution agency—request the attorney general to bring suit. Furthermore, in any suit brought, the court must "give due consideration to the practicability and to the physical and economic feasibility of securing abatement" and the orders enforcing judgment will be in the light of "the public interest and the equities of the case." Very important is the amendment providing that federal suit may be instituted only when pollution affects the health and welfare of persons in a state other than that in which the discharge originates. Thus the amended bill apparently limits federal suits to pollution which crosses state boundaries.

Plane for M&O

Minnesota and Ontario Paper Co. has acquired a new Republic "Seabee" amphibian plane, based at Fort Frances, Ont., for use in forest management, emergency and personnel ferrying. Capable of safely carrying 900 lbs., the 4-place craft is powered by a 265-hp. motor. Piloted by Douglas R. Gillon, Fort Frances boy and RCAF veteran, the plane is operated under supervision of J. F. MacKellar, manager at Fort Frances.

Patent Suits Filed by Consolidated Water Power & Paper Co.

PULP & PAPER received the following letter, dated Aug. 13, 1947:

"We wish to advise that on July 28, 1947, we filed suit against The Mead Corporation, Dayton, Ohio, charging infringement of United States Letters Patent Nos. 1,921,368 and 1,921,369. These patents known as the 'Massey Patents' refer in part to the coating of paper in one continuous process on the paper machine. The suit was filed in the United States District Court for the Southern District of Ohio, Western division.

"This is the second patent infringement suit filed by us, we having filed a suit against Kimberly-Clark Corporation, Neenah, Wisconsin, on May 3, 1947, on the same patents. This suit was filed in the United States District Court for the Eastern District of Wisconsin.

(Signed) WALTER L. MEAD,
Consolidated Water Power
& Paper Co.
Vice President.

BIDS ARE CALLED FOR ALASKA'S FIRST MILL

The ink from President Truman's fountain pen was hardly dry on the bill authorizing the use of national forests in Alaska for private-owned pulp and paper industries, while relieving the operators of any threat of usurping Indian claims, before the U. S. Forest Service stepped out with its offer for sale of a reputedly 1,500,000,000 cu. ft. timber area.

This is the area shown in a map published on page 29 of the July, 1947, issue of **PULP & PAPER**, in the Thomas Bay and Petersberg region and including several strips of timberland (on Kuiu and Kupreanof Islands) which were given "back to the Indians" toward the end of Harold Ickes term as interior secretary under a pseudo-judicial action which he himself had instigated. The claims of Indians to other areas in this same pulptimber unit were held in abeyance and the whole matter is still to be finally settled in claim courts or by act of Congress.

But meanwhile, the bill which both houses of Congress passed and which Mr. Truman signed on August 6 will place in escrow all the moneys which private industry pays for the timber and this will be used to pay off the Indians, if and when their claims are upheld. The Indians will not be permitted to take over property or timber, and private investors will not have to worry about losing their investment to the natives, whose aboriginal claims became of such ostentatious concern on the part of Mr. Ickes.

Auction bids for this first timber unit must be received by the chief of the Forest Service, South Agriculture Building in Washington, D. C., by 2 p.m., Oct. 1.

Indications are that if a satisfactory operating agreement and system of payments can be reached between the Forest Service and the winner of this first auction sale, that other blocks of timber will be quickly put up—probably two in the Ketchikan area and possibly another in the Sitka region.

Mr. Heintzleman's Triumph

Frank Heintzleman, regional forester for Alaska, is the person generally credited with almost single-handedly carrying the renewed campaign for an Alaskan pulp and paper industry to this point of near-realization. He has spent virtually a lifetime "stumping" the country in this cause and the interfering tactics of the Department of Interior had seemed almost to have wrecked his hopes again. Twenty years ago, he carried on a similar campaign and actually saw a mill started, but the depression then halted the march of progress. Mr. Heintzleman has spent recent weeks in Washington, D. C., close to the campaign for the industry bill. Prominent pulp and paper executives, who have been approached many times by Mr. Heintzleman on his pet project, are genuinely expressing their respect and admiration for him in dubbing him "Alaska's Super Salesman."

Although the newspapers of the country have ambiguously called the bill signed by Mr. Truman as the "Alaska newsprint bill" and have frequently headlined that it authorizes a newsprint industry, the facts are that most of the financiers interested in Alaska projects have in mind the manufacture of more profitable high quality market sulfite pulp, rather than newsprint.

At lease three different market pulp groups are interested in sites in the Petersburg, Ketchikan and the Sitka areas.

For the first block of timber up for sale, the Forest Service requires that bidders submit evidence that they have a present fund of at least $8,000,000 and that they are "experienced" in pulp and/or paper manufacturing no later than Sept. 8. Earnest money deposit of $25,000 is required with the bid and an additional $75,000 seven days after acceptance of a bid.

A mill costing between $20,000,000 and $30,000,000 must be built, along with a community for 6,000 or more persons. Lowest price which will be considered for the timber is 85 cents per 100 cu. ft.

The Alaska Native Service is considering methods to train Indians in their industrial school at Sitka for jobs in the mills.

D. & F. Company of Los Angeles, headed by Emmett Dougherty, is one of the groups interested in this first pulptimber unit offered for sale. This is a newsprint group, with newsprint capital backing it.

Canadian Contract Is Better

Ben Mullen, who has been projecting a small market pulp mill in the Sitka area (page 20, June **PULP & PAPER**) returned to New York early in August after an extensive re-examination of sites at Ketchikan, Juneau, Petersburg and Sitka. He was accompanied by a representative of a New York pulp and paper concern and a construction engineer employed by a large construction organization in the East. Although the projected Mullen enterprise has not become connected with these two men, he acted as their guide in the examination of sites. He also conferred with Roy Johnson, prominent western engineer who is responsible for the Beaver Falls hydro-electric development at Ketchikan. It is believed that Mr. Johnson would be active in engineering of any mill built at Sitka in connection with the Blue Lake community project.

"The passage of HRJ-205 has greatly accelerated the interest," he said. "But I believe there will have to be some modifications in the contract as thus far proposed by the Forest Service."

On his return to the states Mr. Mullen stopped at Victoria, British Columbia, to confer with the British Columbia Forest Service and examine the type of contract in use in Canada. According to Mr. Mullen, this contract is much more practical from the industry standpoint than the U. S. proposal.

Eight New Sulfate Pulp Mills For Canada—Three Are Completed

While Alaska has been waiting for a government offer that will appeal to private pulp and paper investment, several new pulp mills have been recently completed or are projected in Canada. Here's the score to date:

Completed:

1. Brompton Pulp & Paper Co. ..... Red Rock, Ont.
2. KVP, Ltd. (Kalamazoo Veg. Parchment) ..... Espanola, Ont.
3. Marathon Paper Mills of Canada ..... Marathon, Ont.

Under construction:

4. LongLac Pulp & Paper Co. (Kimberly-Clark) .... Terrace, Ont.
5. Bloedel, Stewart & Welch, Ltd. ..... Port Alberni, B. C.

Projected:

6. Huron Forests Products, Ltd. ..... Blind River, Ont.
7. Fraser Companies, Ltd. ..... Newcastle, N. B.
8. Port Edwards Cellulose Corp. (Celanese Corp. of America) ..... Watson Island, B. C.
9. H. R. MacMillan Export Co. (pulpboard) ..... Vancouver, B. C.
10. Milner Interests ..... Giscombe, B. C.

(Reports of others in British Columbia, Quebec and Saskatchewan are also current, though lacking confirmation.)

Weyerhaeuser Timber Co. Announces NEW BOARD MILL

The finger of destiny has pointed for many years to Lane county in west central Oregon as a likely spot for pulp and paper development in the future and now, at last, announcement is officially made that a new 150-ton-a-day wood pulp and container board mill will be built at the little town of Springfield.

The announcement of this program by J. P. Weyerhaeuser, Jr., president of Weyerhaeuser Timber Co., which already operates two market sulfite pulp mills and is completing a new market sulfate pulp mill at Longview, Wash., was a surprise generally in industry circles but not to persons familiar with the outlook for future pulpwood resources on the Pacific Coast.

For this new mill will rise in an area which is reputed to encircle the world's greatest concentration of sawmills. According to a count made only a few years ago, several hundred sawmills have been operating in Lane county alone with Eugene and Springfield as the principal centers. It was for this reason that the Forest Service chose Springfield as the site of its experiment in building a $3,000,000 alcohol-from-wood plant, using hogged wood and wood shavings from mills of the area, albeit at present there is evident reluctance of private industry to take over the plant in its present condition.

The Weyerhaeuser container board plant will be integrated with a new Weyerhaeuser sawmill being built at Springfield, using slabs from the lumber operation, according to Howard W. Morgan, manager of the company's Pulp Division. A Fourdrinier machine will be installed to make the container board. None of the pulp from this mill will be sold on the market.

Despite the large number of board mills already in operation on the Pacific Coast, that area of the United States is still importing a large portion of its paperboard needs from eastern mills. An important movement of consumer products industries from the East and Midwest to the Pacific Coast in the period since World War II holds promise of greatly increasing the demand in that area for packaging materials of all kinds. Container Corp., Owens-Illinois, Ball Bros., and other converters have moved or are moving westward, while timber and pulp operations in the West are adding board production units.

One glance at a railroad map of Oregon also shows several good reasons why the Weyerhaeuser Timber Co. has chosen Springfield for its latest additions. Railroads from all directions run into Lane county, particularly from the vast timber holdings on the southern Oregon Coast and in also in the Klamath Falls (south central) region.

The new board mill will employ about 175. There will be no bleach plant, according to present plans.

"Unbleached sulfate container board offers the most suitable means of utilizing wood residue that develops incidental to lumbering and sawmill operations," said Mr. Weyerhaeuser. "The plant capacity will provide for utilization of wood from other lumber operations locally as well as our own."

Jon Titcomb is in charge of Weyerhaeuser lumber and logging operations at Springfield.

Weyerhaeuser Everett Mill Adds Alternate Digester

Work has started on construction of a new digester of 18 tons air dry pulp capacity at the Everett, Wash., sulfite pulp mill of Weyerhaeuser Timber Co., which will be used as an alternate while each of the mills six existing digesters of similar capacity are being consecutively relined, Russell J. LeRoux, mill manager, has announced.

Stebbins Engineering Corp. of Seattle, which put in the original brick linings in 1936, when the mill was built, will put in the new linings, also of acid-resistant brick. This will be the first replacement of linings since the mill started up and the work should be completed by the end of 1948. The new digester is to be ready for use by about Jan. 1.

By the end of 1948 the company can decide, on the basis of conditions at that time, whether to use all seven digesters and thus allow for a substantial increase of the present cooking cycle of 7 hours, or whether to continue to reserve one digester for emergency use. Continued refinement and improvement of its paper pulp is anticipated to meet market demands and a longer cooking cycle would be one of the possible ways of achieving that goal.

ED STREET (left), President of Downingtown Mfg. Co., and NORMAN SCOTT (right), Sales Mgr., Orr Felt & Blanket Co., were featured speakers at recent meeting of Papermakers & Associates of Southern California in Los Angeles. Mr. Street was in Los Angeles in connection with installation of new board machine at U. S. Gypsum Plant at South Gate, Calif.

Meanwhile, as we reported last month, Weyerhaeuser Timber Co. is giving preliminary consideration to construction of new facilities for manufacture of dissolving pulps.

Niles Anderson Opens Consulting Office

Niles M. Anderson, manager during construction period of the new Marathon kraft pulp mill in Ontario and formerly manager and operating executive in mills on the Pacific Coast, has opened an office as consulting engineer on design and operation of pulp mills and bleach plants at 71 Old Forest Hill Road, Toronto, Ont.

Mr. Anderson, a professional engineer in Ontario and member of ASME, CPPA and TAPPI, has had 23 years of operating experience.

INDUSTRY MEETINGS

United Nations Wood Use Conference	Appleton, Wis.	Sept. 3-5
TAPPI Fundamental Research Meeting	Appleton, Wis.	Sept. 3-5
Southern Pulpwood Conservation Ass'n	Monroe, La.	Sept. 9-11
Paper Mill Men's Hi-Jinks	Los Angeles	Sept. 19
TAPPI Plastics Fall Meeting	Syracuse, N. Y.	Sept. 25-26
TAPPI Engineers Fall Meeting	Philadelphia	Nov. 3-5
TAPPI Kraft Industry Fall Meeting	Asheville, N. C.	Oct. 9-11
Supts.-Southern and Southeast Division	Asheville, N. C.	Oct. 9-11
TAPPI Fibrous Agr. Residues	Alton, Ill.	Oct. 23-24
TAPPI Pacific Coast Section	Longview, Wash.	Sept. 9
TAPPI Empire State Section	Glen Falls, N. Y.	Sept. 21
TAPPI Delaware Valley Section	Philadelphia	Sept. 25
Chicago Professional Paper Group	Chicago	Sept. 15
Supts. N. Y.-Canadian Division	Murray Bay, Que.	Sept. 8-12
Supts. Michigan Division	Kalamazoo, Mich.	Sept. 18
Supts. Northeast Division	Poland Springs, Me.	Sept. 18-20
Supts. Northwestern Division	Wausau, Wis.	Sept. 26-27
Supts. Penn.-N. J.-Del. Division	Wilmington, Del.	Oct. 3-4
TAPPI Kalamazoo Valley Section	Kalamazoo, Mich.	Oct. 2
TAPPI Lake States Section	Appleton, Wis.	Oct. 14
TAPPI Pacific Coast Section	Everett, Wash.	Nov. 4
National Supts. Convention	New Orleans	May 19-21, 1948
Technical Section, Canadian Ass'n	Vancouver, B. C.	Sept. 4-6, 1948

HOW TO "CATCH ON" AT MICHIGAN MILL

GEORGE K. FERGUSON, President and Gen. Mgr., Watervliet Paper Co., and Mrs. Ferguson lead the employes of the company in an old-fashioned dance at mill "family" party.

Employe manuals and handbooks are issued these days by quite a number of mills and they tend to reflect something of the character of the sponsoring company. A new one has recently been distributed to more than 400 employes of the Watervliet Paper Co., Watervliet, Mich., which operates a two-machine book mill and a coating mill of nine coaters.

The virtues of this book seem to be its simplicity and "plain-speaking" editorial copy (there's not a pompous statement in the entire 30 pages), its good taste, its attractive make-up, and its clear-cut organization of material. It was gotten up by Jack Bierwaltes, who handles company sales promotion, with advice from Ted Scheid, personnel manager.

Entitled "Catching on at Watervliet," the purpose of the book is stated very simply and directly on the inside cover page. In a word its goal is to be helpful. Here's the introductory statement:

"The more you know about Watervliet . . . how it runs, why, who runs it, what there is here for you . . . and—sure—what the others here expect of you—why the more enjoyable you'll find it here. That's what this little book is about. We hope you'll enjoy reading it. We think reading it will pay off, too . . . at least it will give you a pretty fair idea of what the score is around here."

A brief introductory statement by George K. Ferguson, president and general manager, is next. Papermakers everywhere would read with satisfaction his comments that "next to food and shelter, paper is one of the necessities of life" and that "ours is an old and ancient industry, and you can always be proud of your job."

With refreshing frankness he says "while we doubt if there is such a thing as a perfect job, we believe that here we offer you much that should make your work pleasant and agreeable." He speaks of opportunity for advancement and the stress placed upon the employe as an individual and upon his personal welfare.

A page is devoted to telling about the town of Watervliet—"a nice place to live"—a town of 1,200 in fruit ranch country and just an hour's drive from large shopping centers and three hours from Chicago. Then comes a discussion of the company, its 400 stockholders, their $3,500,000 investment on which they have averaged 4% return, the valuation of $7,000,000 on the industry, the names of the directors, etc.

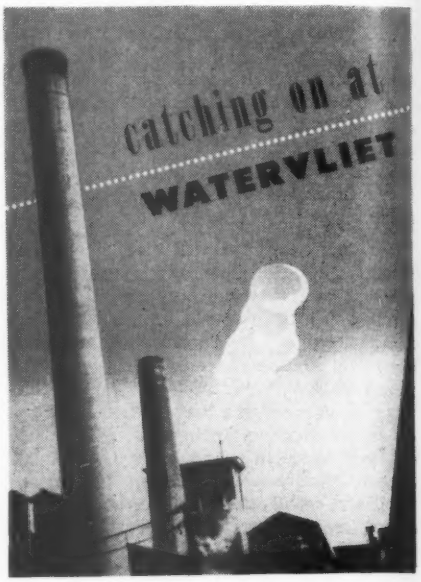
"What We Make" reveals that Watervliet papers go to mail order house and automobile manufacturers' catalogues, magazines like New Yorker, into label and gum wrap, etc. "How We Make It" is the title of the next section, followed by a page of history—how William Syms and George Dudley, from Holyoke, Mass., started the original predecessor company in 1892, of the period when it was owned by American Writing Paper and of the modern company started in 1910 by Kalamazoo owners headed by Charles B. Hays, James Balch and the late August Scheid.

"According to the rules" lists necessary rules for employes—"most of us don't break rules if we know what the rules are . . . if we know they are fair rules . . . if we know they apply to everyone . . . if we know these rules will make this a better, safer place to work," says the booklet.

"Your paycheck," "working hours," "vacations and holidays," "layoffs," "is Watervliet going places?" and "gripes" are headings for other sections. The employes are told that the company is spending over $1,000,000 to modernize the coating mill, to rebuild B machine and add to power resources.

"Who's who at Watervliet" carries pictures of those mill executives who have contacts with employes as representatives of management and tells briefly about their careers and personal lives. In these personal histories it is interesting to note how several men in executive positions worked up through the mill.

Mr. Ferguson, born in Bangor, Mich., but raised in Kalamazoo, worked in the laboratory and the office, starting in 1914. One of his three sons is a United Airlines pilot and a daughter is a lab technician at Upjohn Co. in Kalamazoo.



THIS IS THE COVER of the Waterville Paper Co.'s new handbook for employes.

Louis J. Scheid, general superintendent and a graduate mechanical engineer, was born in Alaska but also raised in Kalamazoo and he started in the box shop, then went to pushing tables.

V. F. "Doc" Quigley, production manager, was with Hawthorne Paper Co. in Kalamazoo for a couple of years, joining Watervliet in 1915 and starting in the order department as an assistant.

Art Stolle, assistant superintendent in charge of the book mill, born in Brooklyn, learned papermaking in Kalamazoo, starting as fourth hand at the King mill at the age of 14, becoming a machine tender at 18.

Frankie Docktor, assistant superintendent in charge of the coating mill, started as a color pusher, then tended screens and after eight years as a coater runner, became a tour foreman. He has a 40-acre peach and apple farm as a sideline.

Clarence Chamberlin, chief engineer, worked up in power plants of Michigan industries, joining the Monarch paper mill as assistant engineer and coming to Watervliet in 1910 as chief engineer.

Jack Olson, foreman of the sorting room, was born in Brooklyn, went to sea at 12 and started in the industry as a roustabout. He was beater engineer at the Bardeen mill in Otsego, Mich. Ed Harbin, calender foreman, started in the Bryant mill beater room in Kalamazoo,

worked in other Michigan mills and learned his job as a calender runner.

Charles Clay, in charge of trimming, started on a roustabout crew. George Hambley, electrical foreman, had a rounded experience in electrical work in Chicago, Wisconsin and Michigan.

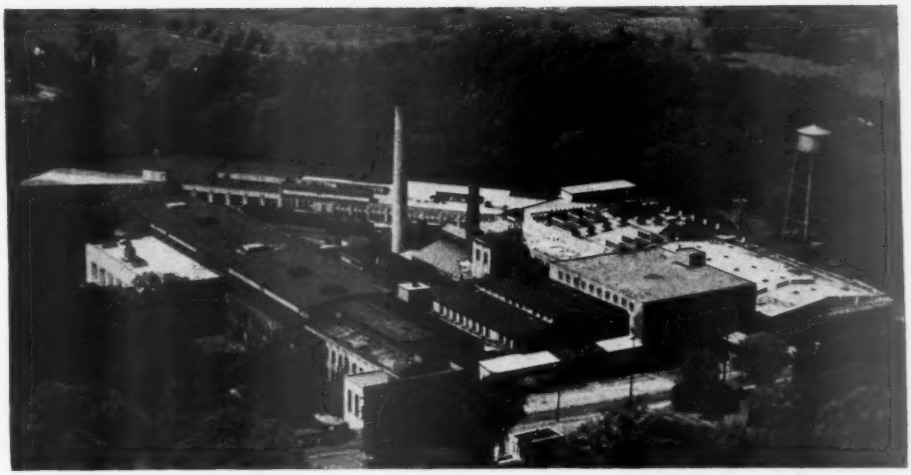
Percy Abbott, in charge of color and coating room, started in the beater room. He has a 40-acre farm and raises prize berries and grapes. Joe Scheid, pipe shop foreman, born in Kalamazoo, started on a pipe-fitting crew. He organized the mill fire department and built its fire engine.

Other sections in this handbook are captioned: "How can I get ahead?" "Available insurance" (voluntary and half-paid by company); "How about fun" (Christmas, Labor Day and other parties); "Twenty-year club," and "Friendly Chats," the company magazine edited by Ted Scheid, personnel manager.

BEST HOUSE ORGANS, according to a recent national contest, include: "The Standard Oiler" of Standard Oil Co. of California; "Snap Shots" of Georgia Power Co., Atlanta, Ga.; "The Business of Farming" of U. S. Gypsum Co., Chicago, Ill.; "The Mandonian" of Minnesota & Ontario Paper Co., Minneapolis, Minn.; "Monsanto Magazine" of Monsanto Chemical Co.; "Permanized Paper Quarterly Exhibit" of Whiting-Plover Paper Co., Stevens Point, Wis.; and "Tissue Topics" of Hoberg Paper Mills, Inc., Green Bay, Wis.

OFFICIALS OF 16 *WISCONSIN* mills met in Port Edwards, Wis., on July 28, to discuss operating and traffic problems. Attending were N. H. Bergstrom, Bergstrom Paper Co., president; W. L. Thornton, Jr., Kimberly-Clarke Corp., vice president; John E. Alexander, president, H. F. Fredlund, S. A. Casey and Vivian Johnson of Nekoose-Edwards; Stanton W. Mead, vice president of Consolidated Water Power and Paper Co.; J. C. Justeson, Mosinee Paper Mills; O. W. Johnson, operating manager, Rhinelander Paper Co.; John White, Wausau Paper Mills; A. J. Schierl, Whiting Plover Paper Co.; W. Irving Osborne, Jr., president, Cornell Wood Products Co.; W. F. Kerwin, Hoberg Paper Mills; D. K. Brown, president, Neenah Paper Co.; E. C. Hilfert, general manager, Riverside Paper Corp.; Franklin Otis, Gilbert Paper Co.; C. B. Anderson, Central Paper Co.; R. W. Mahoney, Appleton Coated Paper Co.; G. D. Muggleton, vice president, Combined Locks Paper Co.; William Wright, Kimberly-Clark Corp.; John Maloney, general sales manager, Hoberg Paper Mills; J. E. Bryan, secretary-treasurer of the Wisconsin Pulp and Paper Manufacturers' Association, and J. B. Chamberlain and J. E. Hart of the association.

JAIN JUGAL KISHORE, a member of the Paper Advisory Board of the Government of India, spent most of August in the United States contacting manufacturers with a view to "buying papermaking and printing machinery." He was stopping in the Hotel Wellington, New York.



GENERAL VIEW of Watervliet Paper Co., in the fruit farming county of Michigan, employs 400 and makes coated book paper.

SOME OF TOP EXECUTIVES OF WATERVLIET PAPER CO. (left to right):

GEORGE K. FERGUSON, President and General Manager; LOUIS J. SCHEID, General Supt.; V. F. QUIGLEY, Production Manager, and ART STOLLE, Assistant Superintendent in Charge of Book Mill. Article tells briefly of their careers.

MORE EXECUTIVES OF WATERVLIET PAPER CO. (left to right): FRANKIE DOCKTOR, Assistant Superintendent in Charge of Coating Mill; CLARENCE CHAMBERLIN, Chief Engineer; JACK OLSON, Sorting Room Foreman, and ED HARBIN, Calender Foreman.

MORE WATERVLIET EXECUTIVES (left to right): CHARLES LAY, Trimming Room Foreman; PERCY ABBOTT, Color and Coating Foreman; JOE SCHEID, Pipe Shop Foreman, and GEORGE HAMBLEY, Electrical Foreman.

IMPROVING OPERATIONS

AT FLORIDA MILL

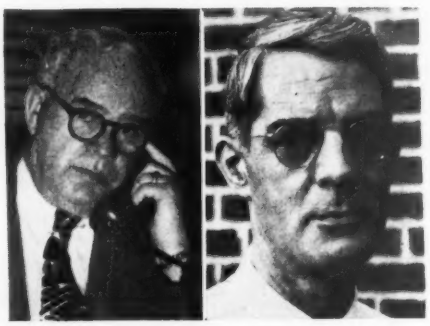
It was in August, 1941, that production began in the mill of Florida Pulp & Paper Co., 17 miles north of Pensacola, Fla., a new enterprise managed by old heads, and since that time this plant has been sucessively stepped up to keep pace in America's progressive pulp and paper industry. Started with an original 65-ton capacity, the mill was moved up to 165 tons and now the current expansion program will lift production to 225 tons per day with the aid of modern equipment.

(This mill is now a St. Regis subsidiary and also a St. Regis affiliate will be the new Alabama Pulp & Paper Co. mill which is being built just across the highway from the Florida Pulp & Paper Co. mill.)

One of the first completions in the Florida Pulp & Paper Co. improvement program was the installation of a Jones-Bertram beater, built by E. D. Jones & Sons Co., Pittsfield, Mass. This unit is driven by a 250-hp. synchronous (Westinghouse) electric motor.

Initial experience with the beater during the first three months of 1947 proved that while it rated 60-ton capacity it handled up to 70 tons in 24 hours. The quality of work has proven satisfactory to the mill management, it being said that uniformity is achieved because a single unit is involved rather than manipulation of several smaller beaters. It was stated that the Jones-Bertram beater accomplished in 10 minutes what formerly required 2½ hours to do.

The product of the big beater goes to the 106-inch Beloit five-cylinder paper machine, installed as part of a Defense Plant Corp. project and subsequently absorbed by Florida Pulp & Paper Co.



JAMES H. ALLEN (left) President, Florida Pulp & Paper Co., director of St. Regis Paper Co., and also head of the new Alabama Pulp & Paper Co., whose mill is being built across road from Florida Pulp & Paper Co., Cantonment, Fla. At right is R. G. SEIP, Chief Engineer for the companies in Florida, whose role is an important one in new construction developments.

An interesting installation for refining pulp and involving two Shartle No. 6 Hydrafiners and a DeZurik regulator was designed by the mill. In this there are four tanks. Two of 1½-ton capacity each are in the upper level and two of 2-ton capacity each are on the lower level. The two upper tanks are cross-connected, feed to the third, which in turn serves the fourth.

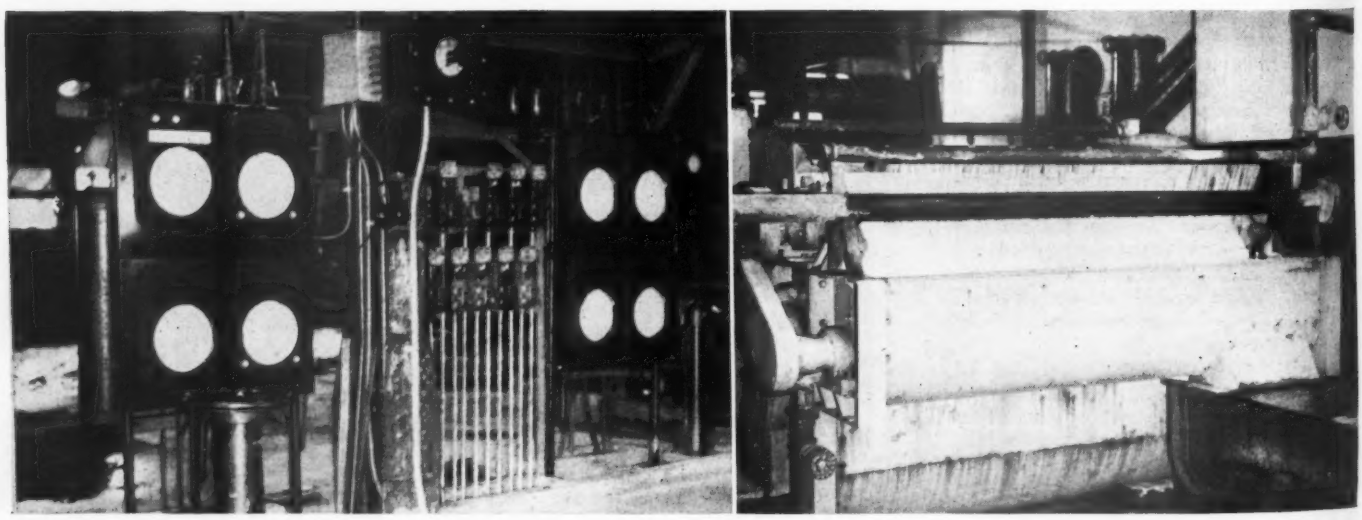
A Shartle 5,000 GPM centrifugal pump driven by a Louis Allis splash proof motor serves the two Hydrafiners, each of which has a 350-hp. Westinghouse electric motor operating at 450 rpm. The stock drawn from No. 4 tank moves through the refiners and thence back to a common carrier pipe. A gate valve in this line controls by size of opening how much stock will move to a DeZurik regulator on the upper floor, and how much will go back to No. 4 tank for recirculation.

Stock taken out through the gate valve averages around 600 gpm. or a ratio of 600 to 5,000. It goes to the regulator at a consistency of 4½% and is reduced to 3½% before being sent to the No. 1 machine, a 144-inch trim Black Clawson Fourdrinier.

A graphic illustration of the Black-Clawson Fourdrinier machine installed at Florida Pulp & Paper Co. only a few years ago is shown with this article. It is of quite recent design. But for the new Alabama Pulp & Paper Co. across the road, there will be a new Black-Clawson Fourdrinier of much larger size and designed for much more speed—up to 2,000 ft. per minute. It is understood that the new machine will be equipped with anti-friction bearings throughout.

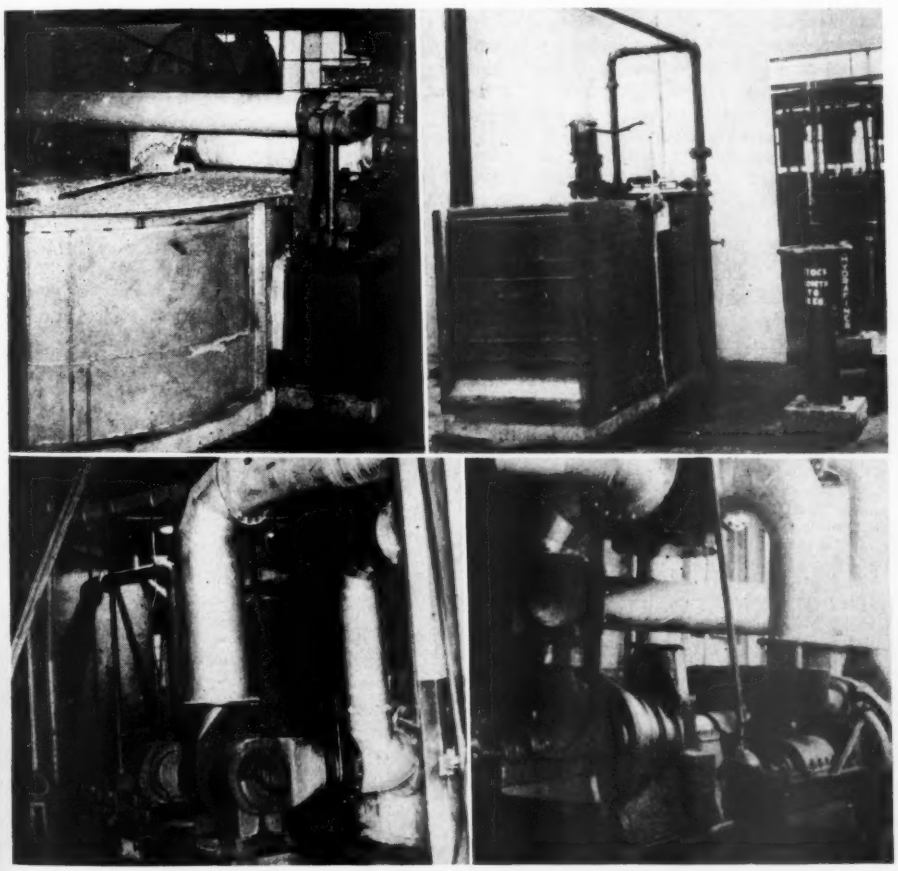
Further installations for increased and improved handling of stock include a new Improved Machinery Corp. 3-stage washer and flat screens. The washer was turned over for operation this year, and experience thus far indicates an ability to handle in excess of its 160-ton-per-day rated capacity. The changes being effected in this department will provide a net

FLORIDA PULP & PAPER CO. has one of the most modern centralized control systems for all operations of the pulp washing department. Control board is shown at left. This instrument control was installed by The Bristol Co., of Waterbury, Conn. Shown at right is last stage of Horne 4-stage bleach plant in which are installed four Impco vacuum filters and Bristol instruments.



HERE'S GRAPHIC ILLUSTRATION of how paper is made. This is machine room and Black-Clawson Fourdrinier installed at Florida Pulp & Paper Co. early in World War II—still one of most recent new machines. At upper right is view of mill. New addition was designed by Chief Engineer Russell G. Seip. Paper was made in 9 minutes from opening of headbox gate to the reel when machine started up and it has run up to 130 tons a day of 70-lb. basic wght. sulfate paper.

Starting from left on upper floor, this drawing shows: Two 12-ft. diameter mixing tanks, where pulp is pumped directly from pulp mill. Five Miami jordans. Trimbey regulator. Cypress headbox designed for 1,000 ft. per min. Wire—156-in. wide and 90 ft. long. Beloit design couch roll and suction press rolls. Transite hood is cut away to show 2 dryer sections—16-60-in. dryers in first and 15 in second, each with two top and two bottom felt dryers. Eight-roll calender. Black Clawson automatic transfer uniform speed reel which winds 144-in. trim roll up to 1,000 f.p.m. Cameron Machine Co. No. 18 winder. Hydraulically-operated delivery table. Complete sectional electric drive is shown with motor generator and control panel in basement at rear of first dryer section.



EQUIPMENT AT FLORIDA PULP & PAPER CO. Upper left: E. D. Jones & Sons Jones-Bertram beater of 60 tons rated capacity, but which has handled up to 70 tons in 24 hrs. It has beater roll loading control.

Upper right: DeZurik Shower Co. (Sartell Minn.) stock regulator which drops consistency from 4½ to 3½% before it goes to the machine. Stems for three controlling valves are shown here.

Lower views show Shartle 5,000 gals. per min. centrifugal pump and the pair of Shartle Bros. Hydrafiners powered by 350 hp., 450 r.p.m. motors.

increase in rated capacity. The new flat screens are of 120-ton rated capacity.

The Impco washer's head box is equipped with a built-in DeZurik regulator, and the drive includes Falk gears.

A feature of these new installations is the Bristol instrument control and back of it a central switchboard control extending to the washing system, flat screens, DC current exciter, blow tank stock pump, white water pump, stock pumps to knotters, deckers and repulpers.

Other improvements being effected include a new Impco saveall for the Black-Clawson Fourdrinier machine; a 100-ton Babcock & Wilcox recovery boiler; three additional digesters, six steel tanks and blow tank, all by Chicago Bridge & Iron Co.; a set of quintuple-effect General American cyclonic evaporators, the first of this type in the South; a new causticizer in expansion of the caustic plant; and increased capacity for the finishing room.

When this mill began operation in 1941 it's operation was guided by the late Edward H. Mayo, pioneer in making kraft paper from southern pine, under James H. Allen, president and general manager. The mill proved successful, turning in net profit after taxes of $393,065.10 in 1942; $586,614.03 in 1943; $711,452.12 in 1944; $533,010.38 in 1945; and $898,955.14 in 1946. Returns in 1947 are understood to have been quite satisfactory. Production for the year is forecast at 64,000 tons.

The Wood Behind the Mill

With fee ownership of 225,000 acres of thrifty young forest, credited to Florida Pulp & Paper Co., it is anticipated that the combined consumptive capacity of 250,000 cords (annually) of both St. Regis' subsidiaries—Florida and Alabama Pulp & Paper—will be met without difficulty by exercise of good management on combined lands.

Mr. Allen has always held the concept

that a pulp mill should hold in fee simple well-managed forest lands adequate to supply its pulpwood needs. In the county in which Pensacola is situated, Mr. Allen points out, lands without care or fire protection have an estimated average increment of .25 cords per acre-year. The Florida Pulp & Paper Co. lands, with minimum care and non-intense fire protection, but with natural seeding only, produce an average of 3/5 of a cord per acre per year. Yet, in an extended test conducted by Florida Forest Service, it was found that as high as 2.0 cords per acre-year can be produced on similar lands.

Intensive forestry practice, then, will produce an adequate supply of pulpwood for the industry, and, in Mr. Allen's opinion, this will be effected when it has been demonstrated that pulpwood prices are stabilized at a profitable level for tree growers. Heedless burning of forest lands in the South will stop when this same realization of tree values is established. Until this time comes, pulp mills not hedged with an adequate forest stand run the risk of a period of pulpwood shortage during the transition period.

Southern woodlands offer a far greater opportunity for lands not capable of producing cotton efficiently, according to Mr. Allen. On those acres not amenable to the new mechanized cotton farming, pine trees will produce the equivalent in fiber of four times their scant yield of staple. For cotton itself, there exists a tremendous market in dissolving pulps for well-priced retail items such as toilet articles.

In adding its proportionate share of southern production, said Mr. Allen, the St. Regis Paper Co. has achieved an economic fixation in the sense that its two Pensacola mills are backed with forest resources upon which to base production. This makes for a sound, enduring investment; dependable and creating an opportunity for permanent, stabilized employment.

FLORIDA PULP & PAPER CO. staff includes (left to right): JOE BRUFFY, Technical Service Superintendent; G. T. WEGNER, Assistant Secretary; KARL R. KARLSON, Plant Manager, and HAROLD MACKLEM, Assistant Plant Engineer. Mr. Macklem is a son of William W. Macklem, Sales Engr. of Black-Clawson Co., Hamilton, Ohio.

Mr. Allen credits Roy Ferguson, president of St. Regis, for this. "Mr. Ferguson has demonstrated a willingness to carry responsibility for decisions facing a man in position of high leadership," Mr. Allen told PULP & PAPER Industry. "It is gratifying to pass to him a vigorous, profitable operation starting from the soil itself."

Gillespie Takes Over As TAPPI President

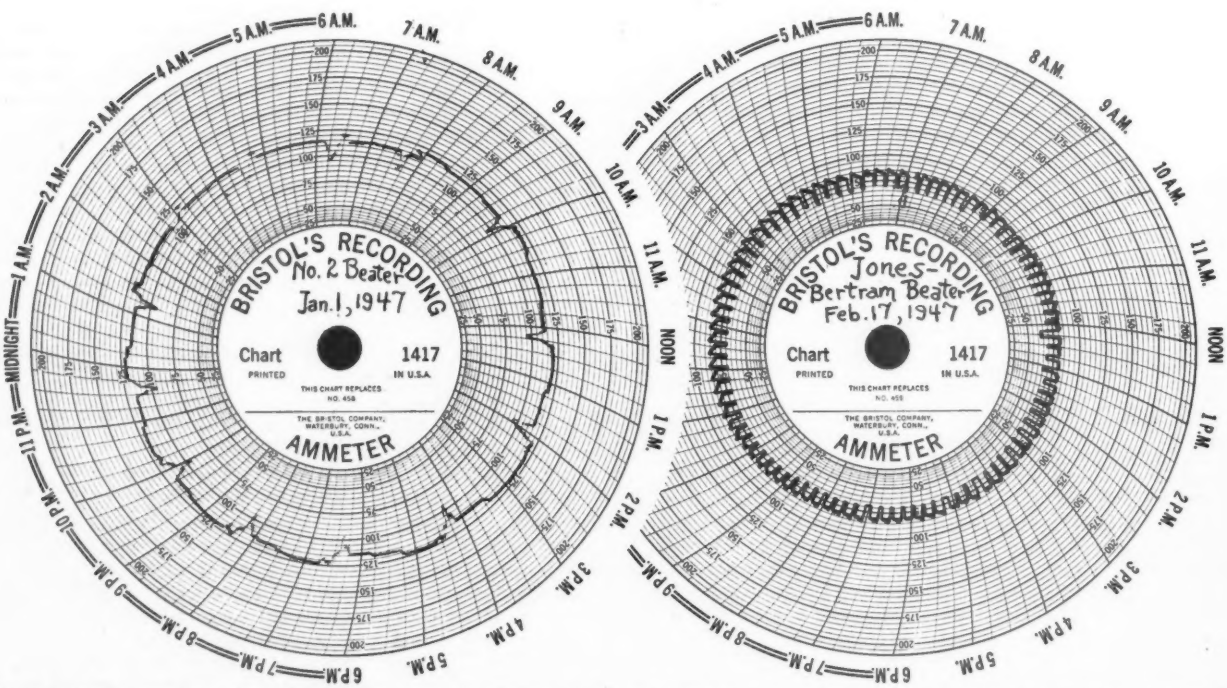
Unanimous action by the executive committee of TAPPI has called up Wilbur F. Gillespie, technical director of the Pulp and Paper Division, Gaylord Container Corp., Bogalusa, La., to fill the unexpired term of the late President Worthen E. Brawn of TAPPI.

Mr. Gillespie, as reported in these columns last month was expected to succeed to the presidency because he has been serving as vice president, but in accordance with the association constitution, this required a committee vote. When this action was officially taken, slightly more than six months remained of the year's term.

Mr. Gillespie, who spent part of his vacation this summer in New York on TAPPI business after the sad news of Mr. Brawn's passing was received, said:

"Our association has suffered a distinct loss in his passing and personally, I have lost a friend for whom I had the highest admiration. To do a job like he would have done for TAPPI will be a difficult task. However, I pledge that I will make a sincere effort to serve the membership to the best of my ability."

The wheels of fortune have thus brought a Southern mill official to the helm in TAPPI for the second time in recent years except for the brief six months term of Mr. Brawn, despite the fact that there is still no TAPPI section in the South. Gunnar Nicholson, vice president of Union Bag & Paper Corp., although now stationed in New York, was in charge of mill operations in Savannah when he was president of TAPPI in 1946-47.



The two beater recordings shown here illustrate the effectiveness of the new installation, one being a No. 2 Beater run taken on Jan. 1, 1947, the other a record of the Jones-Bertram beater taken Feb. 17, 1947. The Jones-Bertram beater can be operated either manually or by automatic control. When a stock run is made to produce a desired quality, the template of the run can be cut, placed in the instrument panel, and the run be duplicate time after time. This new beater, replacing four smaller units each driven by a 125 HP motor, saved 50% of the HP formerly used.

Westminster Paper Co.

USES SLAB WOOD; DOUBLES OUTPUT

Capacity of Westminster Paper Co., specialty paper manufacturers at New Westminster, B. C., is being doubled to approximately 18,000 tons a year.

Most important factor in increasing production has been the installation of a new Beloit paper machine and various auxiliary units, but an interesting development is the groundwood mill which will utilize as raw material the former waste slab wood from sawmills, to be delivered from nearby lumber plants along the Fraser River waterfront by straddle-trucks.

In addition to meeting its own requirements, Westminster Paper Co. plans regularly to ship some of the production of its groundwood mill to its affiliated company, Pacific Coast Paper Mills, at Bellingham, Wash. Mr. Herb expects that the groundwood mill will be in operation during November.

During summer months following installation of the new Beloit machine, a limiting factor in production was lack of steam, but this was rectified when the new boiler plant went into operation late in July. A new Foster-Wheeler 625-h.p. unit then augmented the steam supply, and a unique power setup is provided by means of which two Moore turbines effect considerable economy through skimming power off the steam before it passes on to the paper machines.

The result of the modernization and expansion program, which cost approximately $1,750,000, is that Westminster Paper Co. not only is able to produce twice as much as before the project was undertaken, but is able to do the job more efficiently with an impressive array of new machinery and equipment.

President E. M. Herb states that maximum utilization of raw material and power was one of the major objectives sought when the changes and enlargements to plant were initiated, and this has been achieved to a remarkable degree.

The Westminster mill, as a result of the transformation effected during the past few months under the direction of Mill Manager John Ashby and other operating officials, is no longer merely a conventional setup; it embraces many decidely new techniques which will be studied with interest during the coming years by industry executives.

The new Beloit machine, to operate in conjunction with the earlier model that carried the full load of production for a good many years, has a nominal width of 132 inches. It has a 65-foot long wire. The dryer is 12 feet in diameter and carries 100 lbs. steam pressure per square inch. Speed is conservatively estimated at 1,500 feet per minute.

The machine is driven by a Canadian General Electric electronically controlled helper motor type drive having a main motor of 200 h.p. and two helper motors of 40 h.p. capacity each. Vapors are removed by a Ross Engineering Co. hood.

New Machine Equipment

A control panel has built into it the control mechanism manufactured by The Reliance Electric & Engineering Co. of Cleveland, O., and this controls the Reliance v-s winder drive. The wet end of the machine has an improved type Beloit headbox which incorporates patented crossflow distribution of stock.

Automatic lubrication is provided by a Bowser centralized oiling system, manufactured by Bowser, Inc., Fort Wayne, Ind.

Capacity of the new Beloit machine is 40 tons per 24 hours operation. Most of the output will be in toilet tissue, waxing stock, fruit wrap, facial tissues, cellulose wadding. The older No. 1 machine will concentrate on crepe toilet, napkins and towels.

With the two main machines in use, the company's operation will be far more flexible than was possible under the previous conditions. No. 1 machine was worked continuously, seven days a week, 24 hours a day, ever since the summer of 1935 except for a brief suspension during 1941 when part of the plant was rebuilt. Whenever it was decided to alternate pro-

HOW IT GREW —

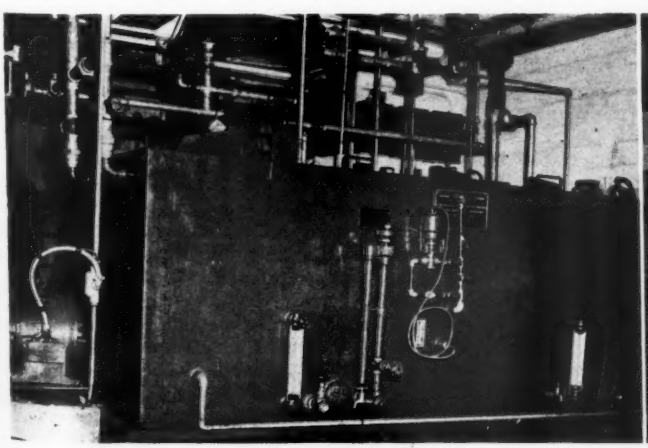
While testifying at a recent hearing in opposition to proposed 30% increases in freight rates across Canada, C. T. Radcliffe, sales director for Westminster Paper Co., told how his company started up in 1922 with capacity of only 3,600 tons a year, with 65 employes and an annual payroll of $100,000. Original investment was $250,000. By 1943 the company's investment had grown to $1,000,000, and two years later the expansion program that was to cost close to $2,000,000 was under way to provide a capacity of some 21,000 tons a year. The company's payroll will run to about $600,000 a year when this program is completed, and about 360 will be employed.

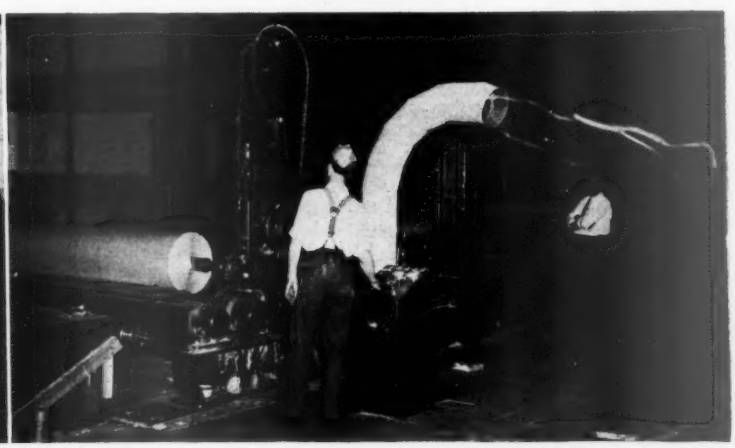
"The mill was originally built to look after western Canadian requirements," recalled Mr. Radcliffe, "and we did not ship east of the Great Lakes. Any small surplus we had that could not be sold in Western Canada was exported. But by 1932 we were shipping about 32 carloads per year into Toronto and Montreal."

Under the enlarged capacity of the mill, Westminster plans to distribute its output in Canada as follows: British Columbia, 6,000 tons, or 400 cars; Prairie provinces, 9,000 tons, or 600 cars; Eastern Canada, 6,000 tons or 400 cars.

INTERESTING NEW EQUIPMENT installed in connection with the new paper machine at Westminster Paper Co. At left is Bowser centralized oiling system, manufactured by Bowser, Inc., Fort Wayne, Ind. This provides automatic lubrication for the machine.

At right, Beloit winder and second calender stack showing Beloit control panel which controls the Reliance v-s speed winder drive manufactured by Reliance Electric & Engineering Co. of Cleveland, Ohio. Fred Erler, General Superintendent of Westminster Paper Co., in background.





duction from crepe napkins, for instance, to fruit wraps, it was necessary to make a complete changeover on the one machine. This situation is now overcome with two machines in operation.

Stock Preparation Equipment

Westminister has installed a Hydracycle stock preparation system designed and built by Alexander Fleck Ltd., Ottawa, Canada. The latter firm is the Canadian associate of the Black-Clawson-Shartle Bros.-Dilts organization.

A 14-foot Hydrapulper is located adjacent to the dock and pulp storage area. The Hydrapulper delivers stock to two Fleck Hydracycle tanks beneath which are located two No. 1 Dilts Hydrafiners. The stock is cycled from the tank through the refiners until sufficiently hydrated, color, size and alum are blended in and the stock is dropped to machine chests equipped with a Miami propeller agitator. This is shown in flow diagram with this article.

All stock and water valves are equipped with remote control and the entire system is operated from a centralized control panel on which suitable recorders are located. The control panel is conveniently located adjacent to the wet end of the machine together with the stock preparation equipment and no separate beater room is involved.

Stock from the machine chests is pumped through a Shartle Bros. No. 2A Miami jordan after which dilution takes place. The stock then passes through two Shartle Miami Selectifier screens to the paper machine headbox. The selectifier screens feature automatically timed reject control.

The Hydracycle tanks proper and the machine chests were fabricated of glazed hollow tile by the Canadian Stebbins Engineering and Manuf'g. Co. of Montreal. The Hydrafiner motors, of 200 H.P. each, and the jordan motor, of 250 H.P., were supplied by the Canadian Westinghouse Co.

Canadian Stebbins lined machine chests are on the floor below the cycling chests, which dump into the machine chests. Stebbins also tile-lined the paper machine pits.

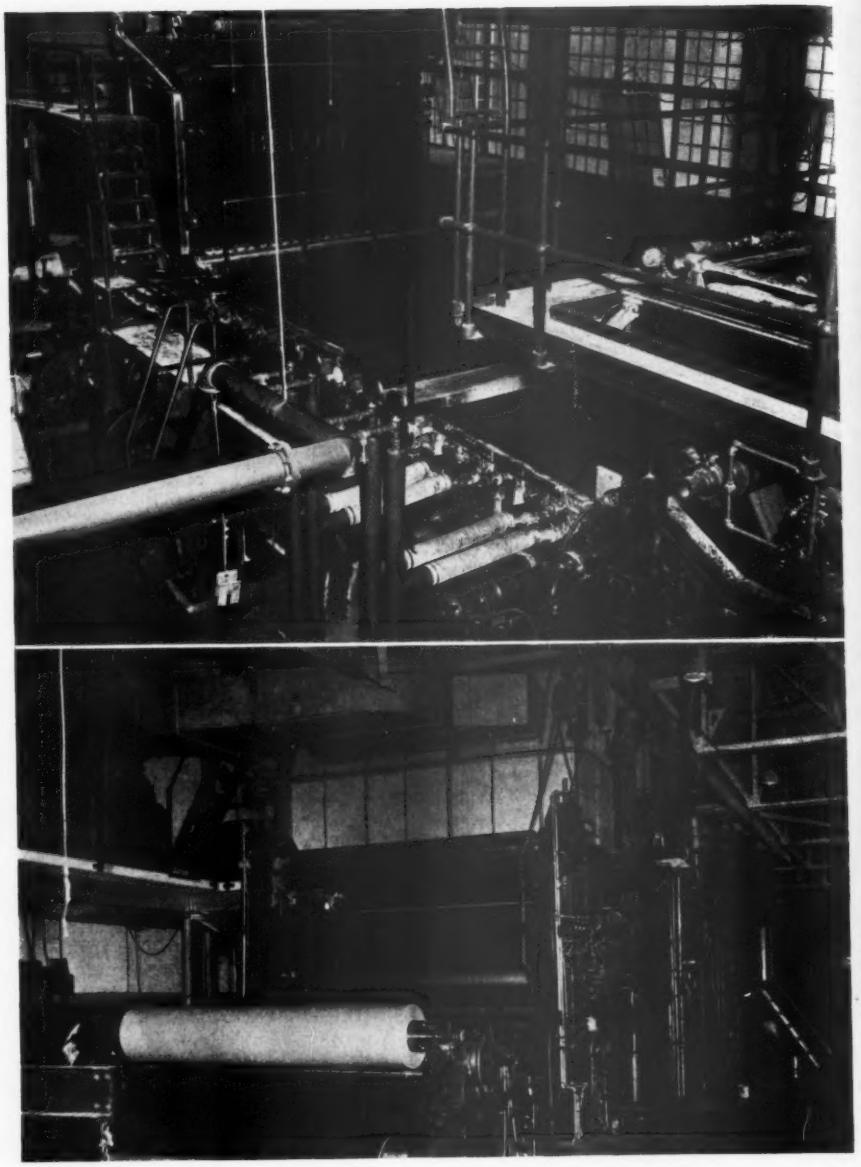
A paper machine 2A Bird saveall was supplied by Canadian Ingersoll-Rand.

Converting equipment consists of toilet rewinders, napkin machines, facial tissue converting machines, towel machines and interfold toilet machine.

Roll wrappers for the wrapping of individual toilet rolls were supplied by the C. A. Lawton Co. of DePere, Wis. The Miami water finishing attachment, used in conjunction with the waxing machine, was supplied by Alexander Fleck, Ltd.

A Case sealing machine, which seals in a central location all the cases put out by the entire converting plant, was purchased from the Standard-Knapp Company. The conveyers were supplied by B. C. Conveying Machinery Co., Vancouver. A Cameron rewinder for the rewinding of breadwraps, was supplied by Bertram's, Ltd., of Dundas, Ont.

The new paper machine building is 144 feet by 56 feet.



WET END (top) and DRY END (below) of new Beloit 132-inch paper machine (126-inch trim) at Westminster Paper Co., New Westminster, B. C. The upper view shows the new improved type of Beloit headbox which incorporates patented Beloit cross-flow distribution of stock. The Ross Engineering Corp. ventilating hood and the new calender stack are shown in lower view.

Power and Recovery

Consulting engineer for the new steam plant is Walter O. Stevens & Co., of Seattle and Vancouver, B. C.

Steam pressure of the Foster Wheeler 625 h.p. boiler is 600 pounds with 725 degrees total temperature of steam. Two steam turbines built by Moore Steam Turbine Co. of Wellsville, N. Y., are operated in connection with the boiler and they will serve to reduce boiler pressure to pressures suitable for drying paper and also to generate about 900 h.p. of electrical energy for use in the mill.

The Foster Wheeler boiler has a Cochrane de-aerating feed-water heater supplied by C. C. Moore & Co.

Twin feed water pumps have been supplied by Warren Steam Pump Co. of Warren, Mass. One of these pumps is driven by a 100 h.p. English Electric motor and another by a 100 h.p. Terry steam turbine operating from 100 pounds pressure against 5 pounds back pressure.

Combustion feed water controls were manufactured by Bailey Meter Co., Montreal, subsidiary of Bailey Meter Co., in Cleveland.

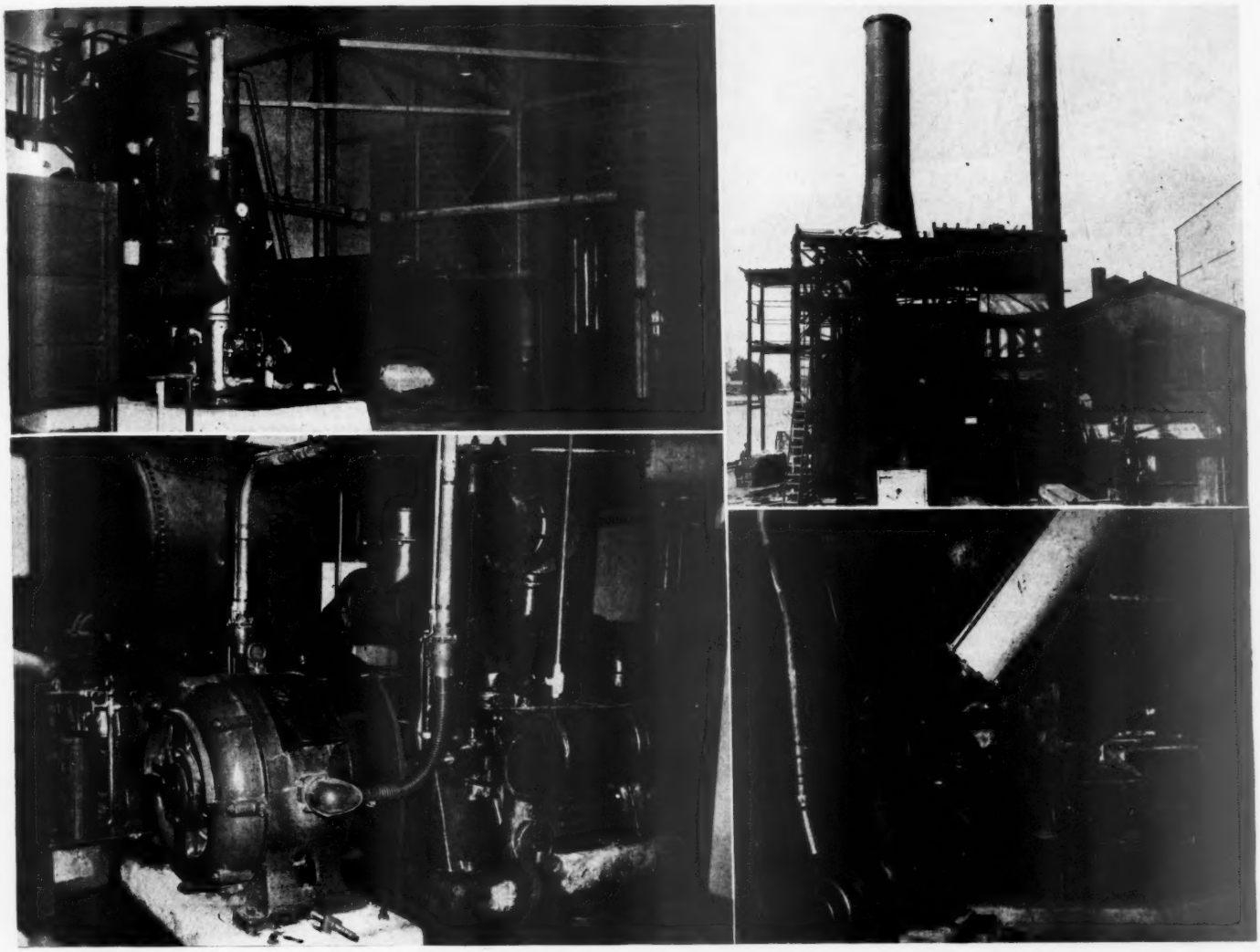
Groundwood Mill

The groundwood mill, which was expected to be in full operation by early fall, has a capacity of 30 tons per day. Main equipment consists of four pocket grinders manufactured by Waterous, Ltd., Brantford, Ont., driven by a 2250 h.p. English Electric synchronous motor.

The screening equipment consists of a Bird Machine Co. Jonsson knotter, supplied by Canadian Ingersoll-Rand, and a Cowan fine screen, supplied by Hydraulic Machinery Co.

The main groundwood storage chest is equipped with Miami Propeller agitation supplied by Alexander Fleck.

The pulp is to be pressed on a 30-ton Kamyr machine consisting of cylinder and



EQUIPMENT at Westminster Paper Co., operated in conjunction with paper machine: Upper left: Bird Machine Co. Save-All, supplied by Canadian Ingersoll Rand, is at left; Fleck (Shartle) Selectrifier screens in center, and tanks built by Canadian Stebbins Engineering & Mfg. Co. to Fleck designs are in right background.

Lower left: Hydrafiners manufactured by Alexander Fleck, driven by two Canadian Westinghouse 200-hp. motors, located immediately below the Stebbins-lined chests.

Upper right: New boiler house under construction.

Lower right: Base of new Hydrapulper with Cameron pump in foreground.

press. The choice of a Kamyr unit was determined by the necessity to ship about one-third of the mill's output to the Pacific Coast Paper Mills at Bellingham, Wash., an affiliated company.

It is proposed to bleach some of the groundwood pulp with a peroxide process.

Although Westminster Paper Co. has been supplied in the past with unbleached sulfite and groundwood pulp by Powell River Co. and B. C. Pulp & Paper Co., the increase in paper production made it necessary to augment these resources with production of groundwood.

It is hoped to maintain the groundwood mill entirely with slab wood from adjacent sawmills. This will be skip-loaded off the chains and delivered to the groundwood mill by Hyster straddle-trucks, three cords to the load—cut in four-foot lengths. At the groundwood mill the wood will be cut to two-foot lengths by slasher saw operating in conjunction with a conveyor chain.

Bark and other refuse will be used as fuel in the boilers.

Westminster Paper Co. products are finding a steadily growing market, extending now across Canada all the way to the Maritime Provinces. Exports have been resumed to countries such as Australia and New Zealand, which were able to take only token shipments during the war under government allocation.

Top Personnel

E. M. Herb, who succeeded his father J. J. Herb to the presidency of Westminster Paper Co. in 1945 after serving as vice president and general manager for eight years, says that the mill will employ 400 workers when in full operation.

F. F. Foote is secretary-treasurer and director; C. T. Ratcliffe, sales and advertising manager; and Fred L. Erler, general superintendent.

John Ashby, mill manager, was technical director of the company prior to his present appointment.

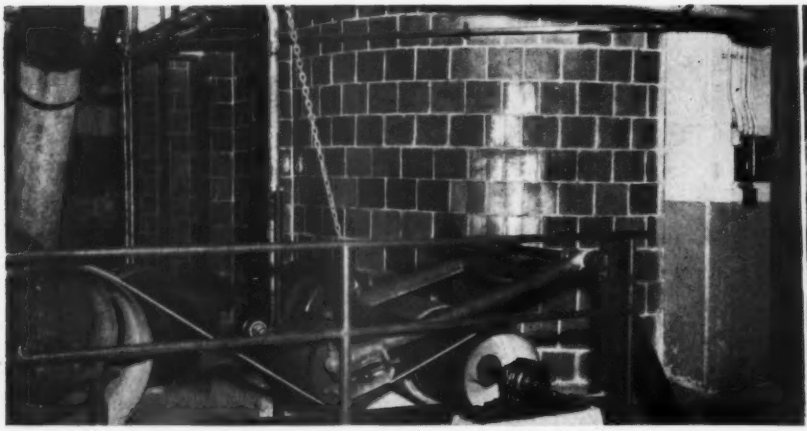
J. J. Herb, founder of the company and chairman of the board, continues active in the business, spending much of his time at Bellingham, where his son F. J. (Bill) Herb, younger brother of E. M.Herb, is vice president and general manager of Pacific Coast Paper Mills of Washington.

Board of directors of Westminster Paper Co. consists of J. J. Herb, chairman; E. M. Herb, F. J. Herb, F. F. Foote, C. Bentall, J. G. Robson, R. L. Cliff and A. Donald Lauder.

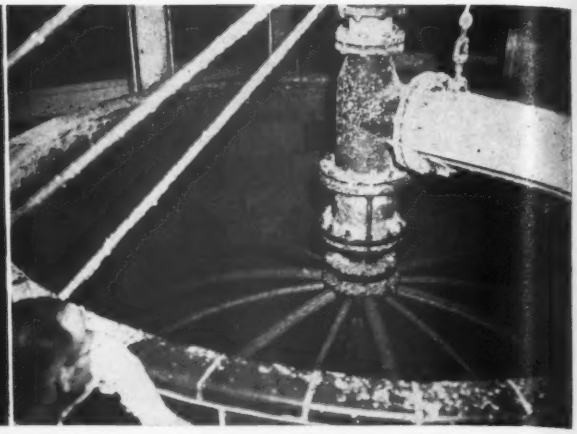
Financial Status

The company has consistently enjoyed favorable business and during the year ended Jan. 31, 1947, the net profit was $156,838, after providing $74,792 for depreciation and $100,000 for taxes. Out of each dollar of sales, the company spent 63 cents for raw materials and supplies, 20 cents for wages, 5 cents for Dominion income tax, 4 cents for depreciation, 4 cents for dividends to stockholders and 4 cents was plowed back into the business for future requirements.

Last year, 91% of the total tonnage produced by the company was sold in Canada under ceiling prices, but at the first of this year price controls were re-



MACHINE STOCK CHESTS (left) at Westminster Paper Co., designed and built by Canadian Stebbins Eng. & Mfg. Co., Ltd., Montreal, with glazed hollow tile.



INTERIOR OF HYDRACYCLE TANK (right) lined by Stebbins. Stock inlet for fruit wrap stock is shown. Below is midfeather dividing chest in two parts. Stock circulates from one side to the other.

moved so that it has been possible to eliminate many inequalities which existed as a result of price freezing.

At the close of the last fiscal year the company arranged for the sale of a bond issue to finance completion of the expansion program, as follows: $480,000 2½ per cent first mortgage serial bonds, dated April 1, 1947, to mature $80,000 annually from 1948 to 1953 inclusive; $480,000 3¼ per cent first mortgage bonds to be dated April 1, 1947, to mature $80,000 annually from 1954 to 1959 inclusive.

Personnel Relations

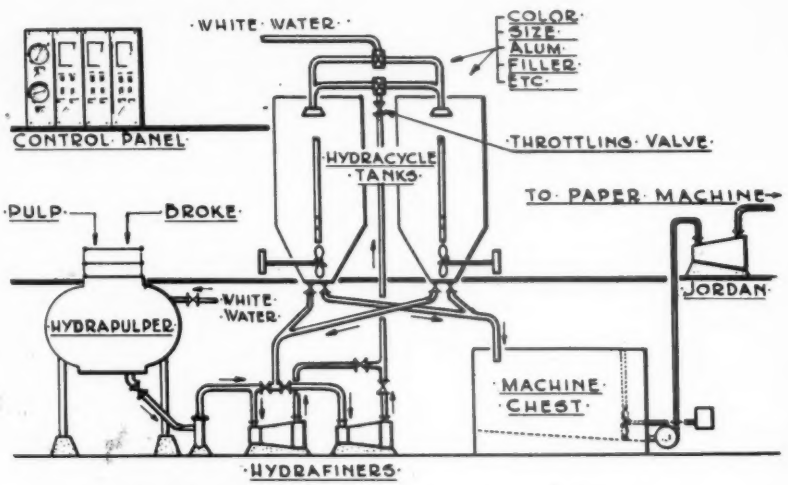
The company has for several years had a progressive personnel relations program in effect. Five years ago the Wapaco Club, composed of employes of 20 or more years of continuous service with the company, was formed. For each member, the company purchases a Canadian government annuity maturing at the age of 65 in the case of men and 60 in the case of women.

A complete health and accident insurance scheme, of which the company pays a substantial share, is available to all employes having 12 months service. This scheme covers all doctor bills and hospital expenses to employes and in the case of married men to their family. In addition, a weekly indemnity of $15 is paid to male employes who are unable to work due to illness of accident. Mill employes, after one year's service, are given free of charge a life insurance policy of $500 which is increased by $100 a year until a maximum of $1,000 is attained.

Pulp Mill Sites Desired In British Columbia

Inquiries for suitable pulp mill sites in British Columbia continue to be received by the provincial government, according to Hon. E. T. Kenney, minister of lands and forests.

"Interest has been shown in properties all the way from the northern coast to the Arrow Lakes district in the southern interior," said Mr. Kenney. "The Forest Service is busily engaged now in preparing data indicating the amount of pulpwood timber that may be available in the areas mentioned.



HYDRACYCLE STOCK PREPARATION SYSTEM
FLOW DIAGRAM
Westminster Paper Co., New Westminster, B.C.

Work Starts on New Mill; Cottonwood May Be Used

A dynamite explosion on Watson Island, near Prince Rupert, B. C., on July 31 signalized the start of rock excavation on the site of Port Edward Cellulose Co.'s new $15,000,000 sulfite and kraft pulp mills. This will be the first wood pulp operation by the parent firm, Celanese Corp. of America.

Construction, likely to continue for two years, with the kraft mill as a later installation, is being carried out by B. C. Bridge & Dredging Co., Vancouver, B. C. It is excavating 400,000 cubic yards of rock at a price of some $400,000.

Former army barracks now belonging to Nelson Bros. Fisheries, at Port Edward, are being prepared as construction camp buildings.

Surveys between Prudhomme Lake and the mill site for a water line have been completed and results have been sent to designers of the mill, Stadler, Hurter & Co., at Montreal.

Most of the planning in connection with the technical features of the proposed new mills is being done at New York, and actual designing is concentrated at Montreal.

Meanwhile some experimental tests are being made to determine the extent of utilization that can be achieved with tree species of the Skeena River area. Two carloads of cottonwood logs have been shipped from Terrace, B. C., to Maryland for laboratory tests by Celanese Corp. If found suitable, cottonwood species may be extensively used.

PACIFIC MILLS, LTD., recently purchased a 14-acre tract of land in Vancouver, B. C.'s, newly-zoned East Broadway industrial district, and is considering the construction of a large and completely modern paper converting plant to supplant its present factory at the foot of Campbell Ave. on Burrard Inlet. At its Ocean Falls mill town, Pacific Mills officially opened a new $1,000,000 hotel, Martin Inn, named for the late Archie B. Martin, former president.

New Service Award Idea

EXTRA VACATIONS FOR 1169 ROBERT GAIR EMPLOYES

"Our company believes that employes with long service records are entitled to special recognition, and recently we set out to find a means to that end," said Wilbur F. Howell, Secretary of Robert Gair Co., Inc., New York, in a recent interview.

After many programs were examined, and numerous surveys had been made, it was decided that "additional time off" was probably the most practical and acceptable, Mr. Howell said. "Varying the routine is important in the morale of every employe," he went on. "And the speed of modern living entitles a person growing older to more leisure time."

Describing the Gair Service Award Vacation Plan, Mr. Howell points out that it is tailored to meet as many varying conditions as possible. Mr. Howell outlined the essentials of the plan as follows:

Service Award Vacations shall be granted to employes who have completed 15 or more years of continuous service with the company. Employes shall become qualified for a Service Award Vacation on the employe's 15th anniversary date with the company and on every additional fifth anniversary date thereafter.

On completing 15 years of continuous employment with the company an employe shall qualify for a Service Award Vacation of two weeks with pay.

On completing 20 years of continuous employment with the company an employe shall qualify for a Service Award Vacation of three weeks with pay.

On completing 25 years of continuous employment with the company on every fifth anniversary date thereafter an employe shall qualify for a Service Award Vacation of four weeks with pay.

At the option of the employe, Service Award Vacations may be taken during the qualifying anniversary year or during any one of the four calendar years next succeeding the anniversary year but cannot be accumulated beyond this period.

EDWIN J. PROPER, Manager of the PaPro Division of Robert Gair Co., Inc., at Utica, N. Y., presents a Quarter Century Club certificate to Alvah Burr, an employe for 30 years, who now rates an extra four weeks vacation with pay under new company plan.

At the option of the employe, any Service Award Vacation may be taken in conjunction with the regular two weeks' annual vacation, or at a separate period during the year, providing that such vacation is taken subsequent to the employe's qualifying anniversary date.

Service Award Vacations may be prorated in units of one or more weeks over two or more years. For example, if an employe qualified for two weeks' vacation, such vacation, at the employe's option, may be pro-rated a week a year over two years or one week one year and one week during another year of the allotted four calendar year period subsequent to the employe's qualifying anniversary date. Service Award Vacations may not be taken in units of less than one week.

Service Award Vacation pay shall be computed and paid in the same manner as pay for the regular yearly vacations.

The company announced the above plan, which applies to Robert Gair Co., Inc., its divisions, and Gair Bogota Corp., on March 31. Participating in the plan are about 850 with 15 years' service or more, and 319 who have passed the quarter century mark. Handsome certificates were given to the two groups, and a Quarter Century Club organized. Formal presentations of the certificates were arranged to fit local conditions.

Said Mr. Howell: "Already we have had good reports of the acceptance of the plan, and there has been considerable good news received at headquarters of interesting and healthful trips, and some long-deferred projects begun."

QUARTER CENTURY CLUB members at Eastern States Carton Division of Robert Gair Co., Inc., at Brooklyn, N. Y., are being congratulated by Division Manager Alexander S. Israel. Left to right: Camille Heyman, an employe for 40 years; Mrs. Israel; Ralph Aronoff, who has had 27 years service; Victor Carabone, Jr., 25 years; David Gerstein, 25 years; Anthony Scialdone, 33 years, and Alfred Weigand, 42 years. They now rate long extra paid vacations under new company plan.

First New Coated Paper Delivered to Time-Life

The Aug. 18 issue of Time was the first to be printed on coated stock from the new Beloit coated paper machine at the West Linn, Ore., mill of Crown Zellerbach Corp.

For several weeks now paper has been traveling from the Oregon mill to the big modern printing plant (partly Time-owned) in Los Angeles in two weights: 50-pound stock for Life, and 40-pound for Time for use in Pacific Coast printing of those magazines for western circulation. However, the Time stock was chiefly used on test runs and the complete swing-over did not begin until the Aug. 18 issue went on the presses, according to Bert Chapman, production department in the Time-Life Building, New York.

Time is now using paper chiefly from Crown Zellerbach Corp., Consolidated Water Power & Paper Co., and The Mead Corp.—but a greater variety of mills have been represented in Life pages which may use several weights and types of paper in a single issue for color work, black-and-white, and plain text. First commercial shipment from West Linn was two carloads which arrived in Los Angeles early in August.

Now, say Time officials, the experimental stage is over and coated stock will be traveling in a steady stream from West Linn machines to Time and Life presses. With the change comes a changeover by Time from offset printing to letterpress, as announced exclusively in the June **PULP & PAPER**. Copy is set by teletype in New York, drops as type in Los Angeles. Acetate sheets, equivalent of film positives, reach the west coast by air.

West Linn's new machine is the first in the Far West producing high-speed coated book paper using an on-the-machine coating process patented by Consolidated Water Power & Paper Co.

IN THE NEWS OF THIS INDUSTRY (left to right):

WILLIAM H. ASTLE, Michigan Paper Co. of Plainwell, who is new Chairman of the Michigan Division of Superintendents Association, meeting every second Thursday in Park American hotel, Kalamazoo. Mr. Astle started in the industry in Groveton, N. H., 1923-1929, and then was 1½ years at Hawley Pulp & Paper Co., Oregon City, and five years at Crown Zellerbach Corp., Camas, Wash., going to Plaintville in 1936.

THOMAS B. SCARFONE, whose appointment as Sales Engineer for Pacific Coast Supply Co., Portland, Ore., is announced by Manager John M. Fulton.Mr. Scarfone, an Oregon State College graduate of 1942, served in the Navy four years during the war, as engineering officer on an escort aircraft carrier.
A. R. FORTUNE, elected Vice President and Director of Sales, Rochester Paper Co., Rochester, Mich., which lays claim to being oldest continuously operated mill in that state, beginning in 1849. As result of modernization completed in 1946, the mill now makes 15 tons daily of absorbent paper. Mr. Fortune started as baterman helper in the Rochester mill in 1929 and reached position of Sales Mgr. in 1941, according to Pres. Paul H. Travis.

PAUL E. COOPER, elected President again of Pacific Mills, Ltd., at stockholders meeting on Aug. 4. Graduate of McGill U. in 1923, Mr. Cooper was engineer in mills in Piercefield, N. Y., and Rumford, Maine, and Manager of mills in England, before joining Pacific Mills in 1943. Louis Bloch was re-elected Chairman, and J. A. Young, First Vice Pres., and H. C. Pim and T. B. Jackson, Vice Presidents, were re-elected.

HERE ARE SOME OF THE MICHIGAN SUPERINTENDENTS DIVISION members and affiliates trying to squeeze sevens out of a pair of Paul Bunyan dice at the recent annual summer outing and field day of the group, held at Gulf Lake Country Club near Kalamazoo, Mich. That folding money is phoney, in case you are wondering.

Personals

MIDDLE WEST

WILLIAM H. ASTLE, of Michigan Paper Co., Plainwell, Mich., recently elected chairman of the Michigan division of the Superintendents Association, announces that this section of the association will hold its meetings the third Thursday of each month at the Park American hotel in Kalamazoo, except for the January joint meeting with TAPPI, and the Ladies Night party in May. Officers of the section for the coming year are Herb Johnson, Allied Paper Co., first vice chairman; William Hathaway, K. V. P., second vice chairman and O. W. Callighan, Edgar Bros., secretary-treasurer.

CLARENCE J. WEST,JR., 60 Bellaire Court, Appleton, Wis., chairman of the Lakes States section of TAPPI, announces that this section will hold its meetings the second Tuesray of each month, October to May, at the American Legion Hall, Superior St., Appleton.

JOHN TRAQUAIRE, research consultant for The Mead Corp., died July 19 at his Chillicothe, O., home. Born in Scotland, he came to the U. S. in 1913 and joined Mead as a research chemist in 1920. He was 69. He headed the fibrous raw materials committee of TAPPI, was prominent in stream improvement activities, and had conducted experiments seeking to convert sugar cane bagasse to a quality paper.

JOHN C. WOOD, vice-president in charge of manufacturing, Kalamazoo Vegetable Parchment Co., is also vice-president of the National Association of Foremen which is sponsoring an "American Management" day at its annual convention in Los Angeles, Sept. 18-20, which about 12,000 management men are expected to attend. Not a union, the NAF is purely educational and consists of 300 clubs in 39 states aimed at bringing together management men.

HARRIS O. WARE, who for the past ten years has been engaged in technical service and research work relating to casein and other derivatives of raw milk, will direct development activities of the Dairy Products division of Hercules, PMC Dept., at Kalamazoo, Mich. He will be assisted by Richard T. Trelfa and Ted C. Foin. New assignments related to the Paper Chemicals division will be handled by Henry F. Heller, in Wilmington, Del., and Robert T. Mashburn in Kalamazoo.

BERT LEWIS, general manager of Nicolet Paper Co., De Pierre, Wis., and his daughter, Peggy, made a summer trip to the Pacific Coast of Canada and the U. S.

IN INDUSTRY NEWS during the past month (left to right):
ROY HOLDEN, Stowe-Woodward Co.'s representative in the Middle West, who represented the industrial affiliates as a member of the Program Committee for the recent highly successful Michigan Superintendents' Field Day at the Gull Lake Country Club, near Kalamazoo.

A. R. "RAY" DYRSMID, promoted from Superintendent to Resident Engineer of the Vancouver, B. C., converting plant of Pacific Mills, Ltd. He was formerly with Western Waxed Paper Co., Oakland, Calif.

KARL R. ZIMMER, President of Zimmer Paper Products, Indianapolis, Ind., chairman of the Executive Committee o fthe Waxed Paper Institute, Inc., which held summer meeting in Hamilton, Ont.

J. E. HEISKANEN, who sailed for Finland on July 12 after nine months in the U. S. He had retired on a Finnish farm when called back to activity in bleaching field. For years he had represented Pulp Bleaching Co. in Europe.

P. F. MIDDLEBROOK, Industrial Relations Dept., Crown Zellerbach Corp., San Francisco, who wears 35-Year Service Pin.

MORRIS CALLAWAY, Box Factory mechanic at Fibreboard Products Inc., Sumner, Wash., who was planning to attend a U. S Mayors' convention in New Orleans. He has been elected to a second term as Mayor of Sumner.

FRANK A. CARSON, appointed Manager of the Seattle division of Blake, Moffitt & Towne, succeeding the late James C. Whitelaw. He was a former President of the Purcchasing Agents' Association of Washington and has been with BMT since 1920.

Personals

NORTHEAST

FREDERIC G. COBURN, president of Brown Company, said work on the company's new sulfate pulp mill and the installation of the new paper machine has been delayed by slow delivery of materials and that the projects will not get benefit earnings in 1947.

HERMAN GRASSELT has been promoted from purchasing agent to assistant to the president and manager of the American Tissue Mills, Holyoke, Mass. Succeeding him as purchasing agent is Charles B. Brown.

BUDD E. SIMONTON has been appointed manager of the Oswego (N.Y.) multiwall paper bag plant of St. Regis Paper Co., according to Willard E. Hahn, general manager of bag production.

Mr. Simonton succeeds Theron Contryman, now on leave of absence because of ill health, but who is expected to rejoin St. Regis in a new capacity.

JOSIAH PARKER BORDEN, a director of the Union Mills Paper Manufacturing Co. and the Universal Paper Bag Co., New Hope, Pa., died in that city July 18. The pioneer paper executives entered the service of these companies in 1897, and was secretary and treasurer from 1904 to 1939. He was a director from 1907 until the time of his death.

RAYMOND J. LEE has been named general manager of Lockport Felt Co. to succeed his father, former Senator William H. Lee, who continues as president. His son continues as treasurer. New directors elected are: Mrs. Elizabeth M. Lee, vice president of the company, and William E. Miller, assistant district attorney in the Lockport, N. Y., area.

CHARLES EDISON, head of Thomas A. Edison, Inc., has wired district sales representatives announcing an immediate expenditure of $2,000,000 to increase the storage battery division's productive capacity because "we believe the present unprecedented sales peak is the result of a long term growth in our market rather than a temporary boom" and 'prospects for the future more than justify this sizeable investment."

NEW YORK offices for the Association of Pulp Consumers, Inc., have been opened at 385 Madison Ave. Karl A. Clauson, newly-elected secretary of the group, will direct activities of the national office, formerly maintained at Washington, D. C

Personals

PACIFIC COAST

BLAINE KERNS, for 41 years sales representative in the Pacific Northwest pulp and paper industry for Westinghouse Corp., reached the retirement age of 65 on July 1 and passed on his responsibilities to Robert L. Simmonds, a graduate of the University of Washington and the Westinghouse training school in Pittsburgh. Mr. and Mrs. Kerns plan to live at their country home near Kingston, Wash. Mr. Kerns was with Westinghouse since college days at Stanford and participated in the beginnings of the important pulp and paper industry of the Northwest.

HARRIS B. FENN, JR., Pacific Northwest manager for National Analine Division, Allied Chemical & Dye Corp., since moving west from Buffalo, N. Y., four years ago, suddenly emerged as a dark horse in Portland, Ore., city golf championship by knocking a favorite and medalist out of the tournament. Mr. Fenn was later beaten but he gave Portlanders a new thrill while about it.

JACK E. HANNY, whose appointment as vice president in charge of all manufacturing for Crown Zellerbach Corp., in succession to the late Albert Barkus, was announced last month, has found an apartment for himself and Mrs. Hanny on Russian Hill in San Francisco. Moving there from Camas, Wash., he is back near the haunts of his college days at Stanford University.

LOUIS PAUL FORTIER, general superintendent at Everett Pulp & Paper Co., was married recently to Thelma Stribling of Everett, Wash. Paul is well known in the New England and Michigan industry, too, for his career includes papermaking at Orono, Maine, and Groveton, N. H., and later at Bryant Paper Co., Kalamazoo, Mich., and Michigan Paper Co. of Plainwell, Mich.

LOUIS C. LAMERSON has been appointed superintendent of the Bellingham Paper Products Co., board mill in Bellingham, Wash., according to Joseph O'Reilly, vice president and manager. Mr. Lamberson was formerly with Fibreboard Products Inc., in Port Angeles, joining the new Bellingham board mill staff early this year.

WASHINGTON STATE pulp mill families did themselves proud in golf this summer. St. Regis Chief Engineer Justin McCarthy's 14-year-old son, who regularly beats his dad on the Tacoma Country Club course, won the state Tiny Tads championship with an 81—he was runner-up last year. And Mrs. Erik Ekholm, wife of the general superintendent at Puget Sound Pulp & Timber Co., won her county championship again and went on to the state women's championship finals, finishing as runner-up in her first try at a major title.

CARL SHOLDEBRAND, sulfite superintendent, Spaulding Pulp & Paper Co., Newberg, Ore., has acquired a 15-acre filbert and fruit farm at Dundee, Ore., as a "side-line." He has fully recovered from the serious automobile accident in which he was recently injured.

Personals

SOUTH

CHARLES O'BRIEN, Purchasing Agent for Union Bag & Paper Corp., Savannah, Ga., and his recent bride, the former GENEVIEVE FARRELL, who will be the "Purchasing Agent" for the O'Brien Company. Mr. O'Brien has been one of Savannah's "eligible bachelors" for a long time.

EARL L. HOBAUGH, mill superintendent at St. Joe Paper Co., Port St. Joe, Fla., was looking forward last month to tossing the crutches away that he has had to wear for some weeks since suffering a broken leg.

EDWARD L. DOZIER has been promoted to superintendent of the pulp mill, The Chesapeake Corp. of Virginia, West Point, Va., succeeding Charles W. Wyatt, who retired. Mr Dozier is a native of Newport News, Va., graduated from William and Mary and took p.g. work at Cornell and Ohio States. He is married and has a young son and daughter.

RICHARD H. LAFTMAN, vice president and general manager of the National Container Corp., Jacksonville, Fla., returned to his office in mid-July after a three months' absence due to health. He underwent a major operation in New York, April 14.

GEORGE E. MOTZ is now sales representative for the Industrial Division of Nopco Chemical Co., Harrison, N. J., it was recently announced by Thomas A. Printon, vice president.

The territory to be covered by Mr. Motz includes the states of Alabama, Mississippi, Louisiana, Western Tennessee and Arkansas.

Another Mexican Kraft Pulp Mill Planned

The Mexican Northwestern Railway is reported to be planning to construct a kraft pulp mill at Matachic, Chihuahua, Mexico. The mill is to have a daily capacity of 150 to 200 tons of pulp, and the railway's planned investment is estimated in U. S. currency at $4,000,000 and $1,500,000 respectively, for construction of the pulp mill and a plywood plant.

Bamboo Newsprint Planned

A $9,000,000 Mexican newsprint plant, designed to convert fast-growing bamboo groves into 200 tons of pulp per day, is being planned by a Los Angeles engineering firm, it was disclosed recently. The proposed plant is expected to be in full operation within two years. It will produce finished newsprint.

The project will be financed, in equal parts, by American capital, Mexican investors and the Mexican government's version of the Reconstruction Finance Corp.

GEORGE M. HUNT, director of the U. S. Forest Products Laboratory, Madison, Wis., is back from a British Forestry Conference in London where he told his Briton hosts that pulp manufacturing in the United States offers "one of the most promising methods of increasing the marketability" of unpopular or little used woods and wood residue from forests or manufacturing processes.

AN INTERESTING DEVELOPMENT IN PAPER USE is the action of the Kroger Co. in adopting a brand name—Kroger—for all its first quality private label merchandise. A great deal of merchandise of this type is sold in the Kroger stores along with nationally advertised merchandise. The new Kroger signature and examples of the variety of merchandise paper-packed with this special label are shown in this illustration. President Joseph B. Hall of Kroger said this label will take the place of a variety of brand names under which the company's merchandise is being sold. Raymond Loewy Associates of New York designed the label.

Installing New Equipment at Memphis

Kimberly-Clark Corp. has begun installation of new cellulose wadding and tissue machinery costing $6,000,000 at its new Memphis, Tenn., plant.

When the new mcahines begin operation sometime in the first half of 1948, the U. S. company's productive capacity will be increased 50%, the company said.

Alabama Newsprint Mill

Development of the $30,000,000 newsprint mill at Childerburg, Ala., is important for many reasons, says Editor and Publisher, listing these:

1. It reveals that capital can be interested in new newsprint production in the U. S. despite the flight of the industry to Canada in recent years and the coversion of many mills to other paper grades.

2. News that Kimberly-Clark is going to operate the mill shows faith on their part that the newsprint industry in this country is not a losing proposition and that newspaper demand for the products will be constant, if not increasing.

3. It indicates what newspaper publishers can accomplish in their own behalf if they have the will, and the confidence in their industry, as exemplified by members of the Southern Newspaper Publishers Association who now have successfully promoted two newsprint mills.

4. The 100,000 tons per year expected from the new mill will go far toward alleviating the current newsprint shortage.

"What has been done at Lufkin, Texas, and Childerburg and on the Pacific Coast by publisher groups, can be done elsewhere," says Editor and Publisher.

J. T. WHELAN has been appointed chief engineer and C. G. R. Johnson assistant chief engineer of the Kimberly-Clark Corp. Mr. Whelan has been acting chief engineer since C. W. Nelson was named manager of the corporation's expansion program.

Better Technology Can Increase JAPAN'S PRODUCTION

By Harold R. Murdock

Paper is a critically scarce item today all over the world. In some countries, particularly in the United States, the shortage is due chiefly to lack of pulp and paper producing capacity. But in Japan the reason is different. Japan has ample producing capacity to meet the present essential needs. What Japan requires is more raw materials. Coal chemicals and miscellaneous raw materials are probably transitory problems of today. They are common shortages in every industry.

What really concerns the Japanese paper industry of the future is the acute shortage of fibrous raw materials. Japan has lost a substantial portion of the forests it possessed before the war. If Japan is to find its proper station among the nations of the world, its demand for paper must increase beyond prewar production. 1,703,000 short tons of paper were produced in the peak year of 1940, but only 231,190 tons in 1946. A recent survey indicates that a total production of 1,000,000 tons per year is necessary to overcome the present shortage. But Japan must produce more than that. It is easy to see the difficulties of Japan, but it is difficult to see the solution.

The average yearly production of forest products in Japan for the period 1941-1944 was about 1.3 billion cubic feet of timber. This does not include the production of firewood or charcoal requirements. This timber cutting represents all-out production, and Japan was then cutting two, or possibly three, times as much timber as she was growing. Japan cannot stand this drain continuously.

In 1946 fiscal year Japan produced 692 million cubic feet of timber. In 1947 the objective is 650 million cubic feet. At this rate of production serious shortages will result. An annual cutting of Japan's timber forests of around 500 million cubic feet is probably the maximum allowance if a sustained yield is to be maintained. In the United States, pulpwood is about 10 per cent of the total timber production. In Japan during 1946 the percentage was 4.5.

Accepting the American ratio it is probable that 50 million cubic feet of pulpwood can be obtained per year on a sustained yield schedule. In 1946, 231,190 tons of paper are reported to have been produced from 32 million cubic feet of pulpwood. Using this ratio an annual production of 360,000 tons of paper can be produced in Japan each year from the 50 million cubic feet of pulpwood. But we have shown that 1,000,000 tons of paper is necessary to meet current demands. Therefore, only one-third of Japan's paper production is possible from pulpwood, if we keep within a sustained yield schedule

Some persons may feel that Japan should import its added need for pulpwood. But that requires collateral as foreign exchange which Japan does not now possess. The same reasoning applies to the importation of printing paper, rayon pulp, and newsprint. Japan must solve its problem independently.

Pulp and Paper Specialist, Chief of Pulp and Paper Branch, Natural Resources Section, General MacArthur's Advisory Staff, Tokyo. (Now in U. S. as Far Eastern member of United Nations subcommittee on Fibrous Resources, meeting in Appleton, Wis., Sept. 3-5).

For the sake of clarity let us first discuss what can be done to help the immediate situation. One of the best immediate remedies is to use paper more intelligently. Misuse of paper for unessential purposes is apparent everywhere in Japan, and places a serious drain on the nation's present supply. Already new technological methods have been applied to production, in order to make more paper from the same amount of pulpwood. A new high yield sulfite process is in production at Nakatsu. The process is being adopted at the Sakamoto and Eushire mills. This process produces one-third more pulp from the same amount of pulpwood. Present equipment in the pulp mill can be used. The new pulp is better and stronger than the regular sulfite pulp. Another recent technological method has been applied to the Eyushu newsprint mills, which heretofore, have had to use 25% of pine sulfite rather than the usual 20 per cent spruce sulfite in their formula, because of pitch trouble tracable to the resins of pine groundwood. By adding to the pulp 5-7% of a volcanic ash, found in Japan, the resins are absorbed completely and the sulfite content can be reduced to the normal 20% value. This is a distinct saving in pulpwood usage. The pulp and paper industry is on the alert to conserve pulpwood by such processing methods.

Coating paper on the paper machine simultaneously with the formation of the paper has revolutionized the book and magaine industry of the United States. These papers which are coated with a clay pigment with starch adhesive give excellent printing quality and permit the use of less woodpulp per thickness of sheet than is the case with uncoated printing paper. Japan must take steps to install such methods on its present paper machines.

Better Use for Wood

Better utilization of the forests resources can pay substantial dividends. This field has received but little attention in Japan. Mine props consume more than twice the volume of timber used for pulpwood. If mine props could be made from another raw material it would reclaim enough pulpwood to produce over 500,000 tons of paper per year. Firewood consumption amounts to many times the pulpwood requirements and even a modest conservation of wood going into firewood could assist the pulpwood availability decidedly. Excellent pulpwood logs have been observed being cut into firewood. A substitute for firewood would aid greatly the paper production situation.

It has been reported that possibly 20% of the firewood used in Japan is for the evaporation of sea water in the production of salt. If this is true, then the use of waste heat from industrial plants, used in conjunction with multiple effect evaporators, could release enough firewood for use as pulpwood to supply nearly all the needs for Japan's pulp industry. The problem can be solved by scientific methods. Such cooperation of industry is one of the best means for answering the problems of Japan's economy.

Reforestation is practically at a standstill in Japan. Vigorous efforts in scientifically planting the essential species of wood is vital for the ultimate future of Japan. Attention should be given to new species, particularly those which grow rapidly. Spruce, hemlock, and fir are the best for woodpulp production but are slow growth trees. Akamatau and other pines are probably the future pulpwoods for Japan. They pulp particularly well by the alkaline processes to give strong woodpulps. Pine are considered fast-growing trees and reach pulpwood size in 25 years in most localities. Hardwoods are also neglected sources of pulpwood. They grow rapidly and have little other use in Japan. Careful reforestation of cut over lands could bring sizeable dividends to the progressive farmer.

A tremendous asset for increased raw material for paper manufacture exists in rice, wheat and barley straw. Over 4,231 million kans (17,347,000 short tons) of those residual straws were available from the 1946 crop. Two-thirds of the straw production (2,821 kans) was rice straw. Nearly 6,000,000 tons of printing paper could be produced from this by-product from agriculture. Such a production would be over five times the needs to meet the present paper demands. Technologically this is possible. But the farmers who consume 75% of the straw for fertilizer, fodder, litter, fuel, food sacks and straw mats, must be assisted to find

substitutes for this straw. These present uses for straw do not yield the maximum possible economic return for this agricultural by-product. A small portion of the farmers' straw production would aid paper production substantially. At present not over two per cent of these straws is used in the paper industry. Technological study of both the farmers' need and the industrial usage could pay Japan handsomely. The problems are varied and difficult but the reward to Japan is worthy of the effort.

Bamboo is another plant crop which should be examined more carefully as to the utility as a paper making material. Its luxurious growth and density of stands appear to confirm statements that bamboo produces the largest cellulose crops per area per year of any plant in Japan.

Japan's pulp and paper industry is not informed of the many important technological improvements which have been made in other countries during the war. Paper machines operating at speeds up to 2,200 feet per minute and with 100 lbs. steam pressure in the dryers are now considered practical. Daily production of 650 tons of paper per machine are expected. Calender stacks 48 inches in diameter and 215 inches face are being constructed. Steam boilers operating at 1,000 lbs. pressure in conjunction with new design extraction turbines are in operation. The use of chemicals in paper to produce new properties for new uses are everyday occurrences. These and many other new developments are the signal lights to Japan. Science has moved the industry forward and Japan must recognize this potential threat to its own paper industry.

In conclusion, it is logical to expect Japan to expand its pulp and paper production. To do so, however, will require intensive technological studies.

UNITED NATIONS (EXCEPT RUSSIA)

Talk in Appleton

The first Fall TAPPI meeting was getting under way this month (Sept. 3-4-5) with two concurrent series of meetings, along with a parallel meeting of the Wood Chemistry Committee of the Food and Agricultural Organization of the UN. Both take place at Appleton, Wis., the TAPPI sessions at the Institute of Paper Chemistry, and the FAO meetings at the Hotel Conway.

Polysaccharides will be one subtopic of the TAPPI session, and lignin and the extractives the second subtopic, according to Dr. Harry F. Lewis, chairman of the Fundamental Research Committee, in an exclusive interview with **PULP & PAPER** late last month. The various sessions are to be held as panel and roundtable meetings and each has an outstanding speaker in the field. 'One very important purpose of the meetings will be to draw up a listing of the important areas on which research is indicated," Dr. Lewis said. "This refers to the specific fields of cellulose, the hemicellulose, the pectins and gums, lignin, the wood tannins, the wood coloring matters, and resins and resinols."

It was hoped to have a prominent foreign speaker at the sessions, with prominent U. S. industry research leaders contributing papers on the above subjects. Prominent educational figures in these fields were also expected to be present. Among the speakers: Dr. E. S. Flinn, The Mead Corp. (wood tannins); Dr. F. E. Brauns (lignin); Dr. Louis Wise (hemicellulose); and Dr. Emil Heuser (cellulose).

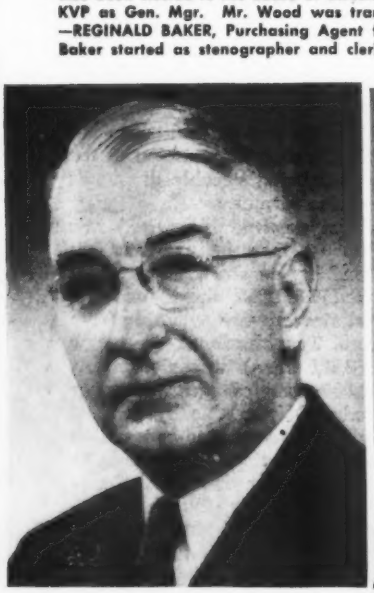
According to Dr. H. Mark, Brooklyn Polytechnic Institute, the FAO meeting begins with a dinner at the Conway Hotel. Following this will be a report on chemical wood utilization in the Far East by Harold R. Murdock, pulp and paper advisor on General MacArthur's staff, who has flown in from Tokyo for the meeting (see his article on this subject in this issue of **PULP & PAPER**). A report on chemical wood utilization in South America will be made by Dr. Mark and a report on nomenclature, testing, and specifications by R. G. Macdonald, secretary-manager of TAPPI.

On the following day: Report on improved cooking methods by Prof. E. C. Jahn, New York College of Forestry; report on lignin by Dr. Lewis, dean of the Paper Institute; report on wood sugar and sulfite sprit by J. A. Hall, U. S. Forest Service, Portland Ore.; and report on wood resin by Dr. Emil Ott, Director of Research, Hercules Powder Company.

In addition to those mentioned above, the following were invited to the FAO meeting: Dr. Milton Harris, Milton Harris Associates, Washington, D. C.; Prof. Otto Maass, McGill University, Montreal; Dr. Alfred J. Stamm, Forest Products Laboratory, Madison, Wis.; Dr. T. L. McElhanny, superintendent, Forest Products Laboratories of Department of Mines and Resources, Ottawa; Dr. E. I. Kotok, assistant chief of U. S. Forest Service, Washington; Dr. W. E. Cohen, division of forest products, *CSIR*, South Melbourne, Australia;Dr. Egan Glesinger, FAO of UN, Washington; Dr. L. J. Rys, of Prague, Czechoslovakia; Marcel Leloup, Department of Forests and Forest Products, FAO of UN, and N. Felsovanyi, technical officer, forest products branch of FAO.

Missing from international give-and-take programs of this nature is a paper representing the status and progress of the industry research in the USSR, big question mark in the world cellulose picture.

IN INDUSTRY NEWS (left to right): FRED E. MAY, who was elected President and General Manager of Rising Paper Co., Housatonic, Mass., succeeding R. H. Dempsey, who died April 15. Mr. May started in the paper industry with Strathmore Paper Co. in 1907. In 1929 he joined Rising as salesman and was later promoted to Sales Manager and first Vice President. Mr. May states that no changes are anticipated in policies. — REGINALD ROCKWELL, General Mgr. of Paper Makers Chemical Dept., Hercules Powder Co., who has been elected a Director of the company. He has been with Hercules since 1922, when he joined a Hercules plant at Brunswick, Ga., as a draftsman. — JOHN C. WOOD, who has been appointed Vice President in Charge of Manufacturing of the Kalamazoo Vegetable Parchment Co., Parchment, Mich. He has also been elected to the Board of Directors. Mr. Wood first came with KVP in 1924, working on a waxing machine. This was the year President Ralph Hayward joined KVP as Gen. Mgr. Mr. Wood was transferred to maintenance costs, then to production costs. Prior to his new appointment, he was in charge of converting operations. —REGINALD BAKER, Purchasing Agent for Powell River Co., Vancouver, B. C., who became eligible last month for membership in that company's 25-Year Club. Mr. Baker started as stenographer and clerk in Engineering Department at Powell River, was Secretary to two Resident Managers and since 1939 headed Purchasing.



EVERY QUARTER AN INTER-DEPARTMENT SAFETY CONTEST is held among all Crown Zellerbach mills of Pacific Coast and New York. For first quarter 1947, the Port Townsend, Wash., kraft mill won a lion's share of honors—its Paper Machine, Pulp Mill, Maintenance and Repair and Bag Factory division winning placques for least lost-time accident per man hour "exposure." Here's Paper Machine group which won (l. to r.): C. Mullen, W. Campbell, D. Olin, M. Palla, R. Donald, G. Neet, M. Hirschel, H. Lytle, T. Geddes, F. L. Ziel, E. Dupuis, W. Miller, R. Pickett, J. H. Quigley (Superintendent), F. Boggs, G. Schneider, W. Plumlee, F. Stromberg, R. Schneider, D. Williams and G. Brooling.

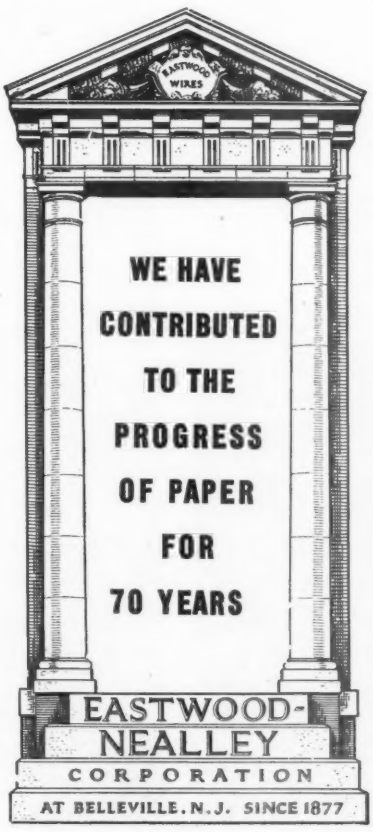
A new tug boat, the *Mary Jane*, has been added to West Linn fleet of Crown Willamette Paper Co., replacing the old wooden-hulled *J. H. Walker*. The *Mary Jane* is named for Mrs. Shanks, wife of Duncan M. Shanks who was fire chief at the West Linn plant for several years. The *Mary Jane* is of all-steel construction powered by a 65-h.p. Atlas Imperial diesel engine; is 42' 6" long, 13' 3" of beam, and 4' 6" draft. With the addition of this boat the entire fleet has become of all-steel construction, and the *Mary Jane* ill function in the West Linn logging operation.

Paper Mill Support Assured in Tacoma

Business and civic leaders of Tacoma, second largest city of Washington, gave a warm demonstration of approval and support to Kenneth D. Lozier, assistant to President Roy Ferguson of St. Regis Paper Co., when he made a presentation before them last month of the benefits to be derived from fully integrating the important St. Regis operations on that city's waterfront.

St. Regis now has a 300-ton kraft pulp mill in Tacoma, backed up by extensive acquisitions of timber in recent years, and the program calls for full integration of operations with construction of a paper mill and bag plant. Equipment from the present St. Regis bag plant in Tacoma would be moved to Tacoma. A Cottrell precipiator, a ring-type whole log hydraulic barker and whole log chipper, a Fibre Making Processes barker for small wood, and other improvements are already being carried out at the Tacoma mill.

Mr. Lozier promised his Tacoma audience that he would make a favorable report to St. Regis directors on the program, as a result of their support.



Soundview and Crown Z Purchase Elk River Timber Co.

The Elk River Timber Co., one of western Canada's largest logging and timberland operating companies, has been acquired by two leading Pacific Coast pulp and paper industries.

Soundview Pulp Co., of Everett, Wash., acquired controlling interest while Crown Zellerbach Corp. has purchased a minority interest. Former owners were a group of Eastern U. S. interests.

U. M. Dickey, president of Soundview, is president of the new logging company, and Don S. Denman, Crown Zellerbach vice president, is the new vice president of the Elk River logging set-up. Other personnel remains unchanged.

Outlet for this vast timber property is at Campbell River on Vancouver Island. It is understood that the two Pacific Coast concerns, both already backed substantially with timber, made the acquisition with a view toward future timber supply for their manufactured products.

CLAREMONT PAPER CORP., and Crown-Mark Paper Corp., 342 Madison Ave., New York City, have announced new members of their staff. Robert D. Price has been appointed New England representative; Paul Bull, formerly with Pejepscot Paper Co., has been assigned the Eastern area; R. M. Crutcher, formerly with Bulkley, Dunton & Co., Midwestern representative; and Ralph T. Olsen, formerly with Sorg Paper Co., has also joined the sales staff. The appointments were announced by R. P. Cuminale, sales manager.

C. R. THOMAS, assistant general manager (finance) and secretary, Australian Paper Manufacturers, Melbourne, Australia, visited around the United States in August principally calling on pulp and paper mills. Following arrival at San Francisco he called at several Pacific Coast mills. Before leaving for England, Thomas called at some of the mills in the eastern states.

NEKOOSA-EDWARDS Paper Company, (Port Edwards, Wis.) directors announced a special dividend of 25 cents per share to be paid Sept. 30. S. A. Casey, head of the company's law department, was elected a seventh member of the board. Others reelected were John E. Alexander, president and general manager; L. M. Hanks, A. S. Puelicher, Judson G. Rosebush, Guy O. Babcock and C. A. Jasperson.

HERCULES POWDER CO. will move its casein blending and grinding operations from Chicago to its Milwaukee plant, which has been making manufactured rosin size and other chemicals for the paper industry. The Chicago plant is being closed.

NEW YORK offices of the Heller & Merz Dept., Calco Chemical Division, American Cyanamid Co., are moved to 48 West 38th St., 7th Floor, New York 18, N. Y. Telephone number, CIrcle 7-0100, remains unchanged.

MAXIMUM WOOD UTILIZATION IS AIM OF

A New Research Lab

RECENTLY COMPLETED NEW 26-ROOM RESEARCH LABORATORY of Minnesota & Ontario Paper Co. constructed of brick, steel, tile and concrete at International Falls, Minn. From the standpoint of timber "backing," Mando is one of the strongest companies in the industry. Work in the laboratory will be aimed toward greater and better utilization of the company's vast forest resources.

Minnesota & Ontario Paper Company, with one of the most extensive timber stands in the industry to back its operations in Canada and Minnesota, has opened a new research laboratory in International Falls, Minn., which will have as its goal the maximum utilization of the company's forest resources.

The development of the company's own coatiny paper process and machine and insulation board machinery already has been successfully concluded. Research along these and similar lines will continue.

The new two-story, 26-room laboratory and the substantial staff of chemists, engineers and other technicians engaged in this work for Mando are a far cry from the old days of research in the paper and pulp industries with much more modest equipment and personnel.

The laboratory has an attractive reception lobby, a manager's office, fireproof vault for important records, a well-stocked library, several individual laboratories and offices. Also included are a complete machine shop, a special room for humidity testing, an organic and an analytical laboratory, and wash rooms with lockers and showers for the personnel.

On the main floor is a two-story open area, 50 feet wide by 118 feet long, where testing equipment and pilot plants are installed.

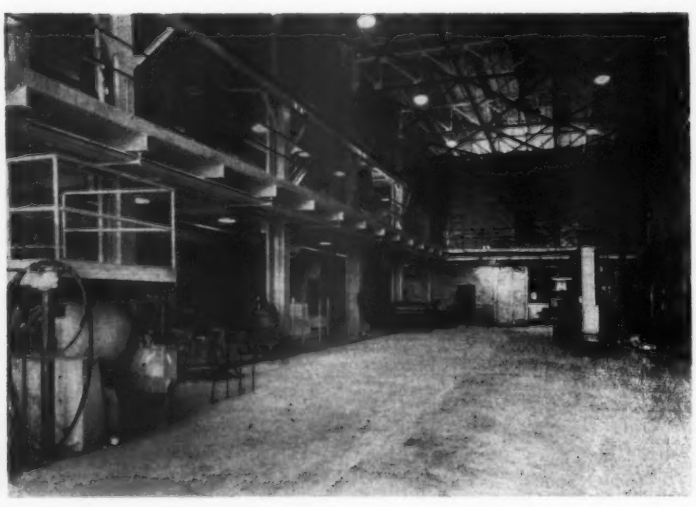
Organized into several major groups, the research program is guided by R. H. M. Robinson, chairman of the board of Mando since 1945 when he was succeeded as president by Donald D. Davis, who had been assistant director of WPB during the war.

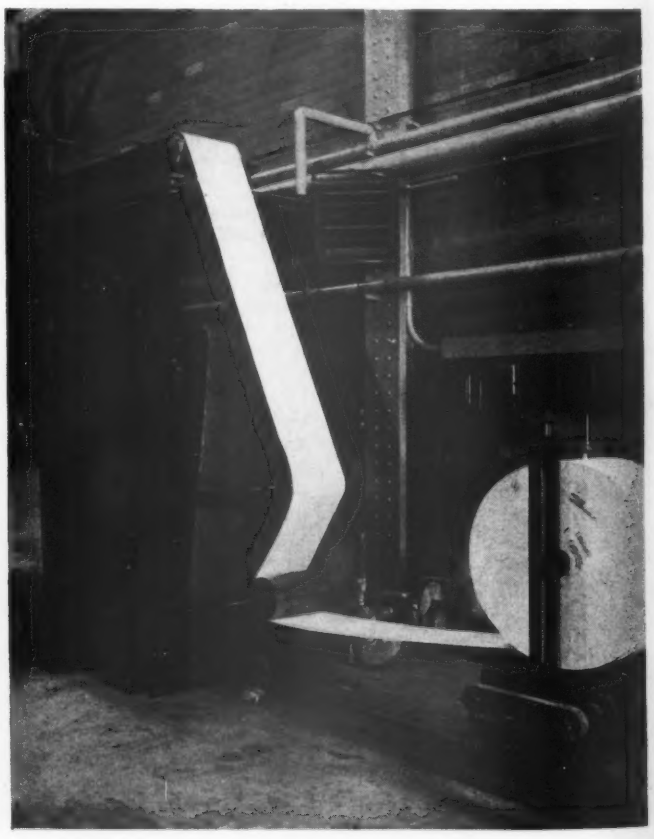
M. S. Wunderlich, director of research, also headquarters in the Minneapolis offices of the company in the Baker Arcade Building. Mr. Wunderlich, one of the country's pioneers of insulation research, was manager of Mando's Insulite sales prior to his present position. He has been with the company since 1932.

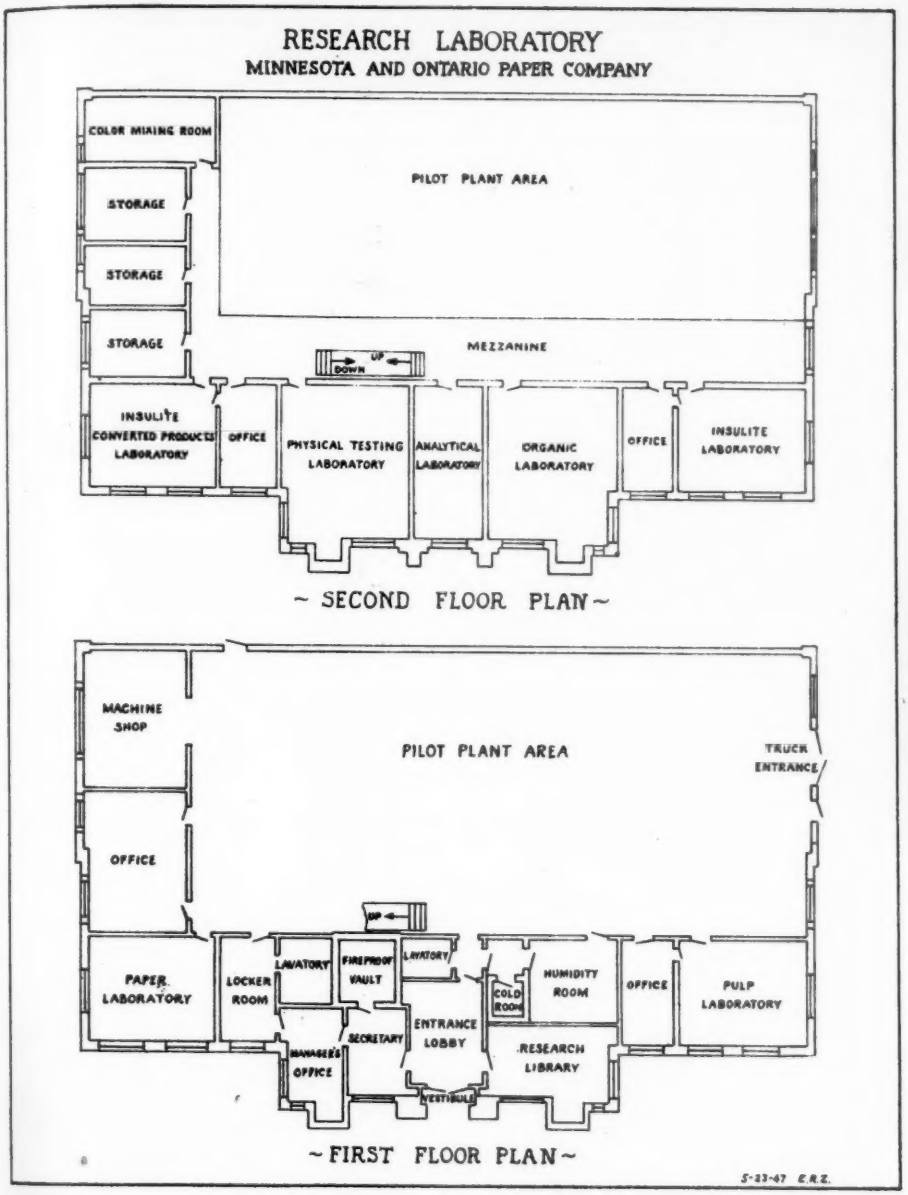
The laboratory and research program at International Falls is under the direct

BELOW IS A GENERAL VIEW of the Research Laboratory interior at Minnesota & Ontario Paper Co., International Falls, Minn. This is a central open area—a two-story room which is so constructed as to accommodate pilot plant equipment of considerable size.

AT RIGHT, the dry end of paper coating machine pilot plant. A high speed coater developed by Mando engineers will go into operation next year. From this pilot plant dry end, paper goes to supercalender.







M. S. WUNDERLICH (left), Director of Research for Minnesota & Ontario Paper Co., with headquarters in Minneapolis, and DR. J. O. BURTON (right), Manager of the new Research Laboratory in International Falls, Minn. Mr. Wunderlich won a fellowship and master's degree at U. of Minnesota; entered insulation field in 1919 as plant engineer for flax fibreboard firm; joined Mando in 1932 as research engineer. Dr. Burton attended Hamline, St. Paul, Maryland and George Washington Universities, did research in cellulose for U. S. Bureau of Standards and later developed working specifications for paper, dry colors, oils and dextrines for U. S. Bureau of Printing and Engraving. Joined Mando in 1937; since 1938 in charge of laboratory research.

GILBERT STEVENS (left), who heads up Mando's Paper and Paper Pulp Products Development, and A. S. BULL (right), Manager of Insulite Technical Service. Mr. Stevens, native of Appleton, Wis., formerly with Kimberly-Clark, Fox River and Appleton Coated Paper Cos., directed original work in developing new papercoating machinery and process for Mando. His brother, John, is President of Marathon in Canada and his brother, Henry, is Vice President of Benj. J. Betner Co. Mr. Bull, native Minnesotan, was formerly stationed in Detroit, Chicago and London for Mando.

supervision of Dr. J. O. Burton originally of Duluth, Minn., who came to Mando in 1937 from Washington, D. C. There he was engaged in advanced research for the U. S. government.

All research work originates with, or is approved by, the executive research committee headed by Mr. Robinson or by the mill research committee. The former is composed of company officers and key research and production officials and meets in Minneapolis. There are five research divisions which deal with pulp and by-products, paper, Insulite, Insulite converted products and experimental machine design.

Experimental work has been done in semi-chemical methods of pulping wood, in production of such kraft pulp by-products as turpentine, soap, tall oil and calcium carbonate and the scope of the research programs have been announced as including such sulfite by-products as yeast, alcohol, dispersing agents, tanning agents, etc., but of course in all these instances the economic angles will control the products that are practical to produce.

Paper research division is primarily concerned with research relating to the manufacture or conversion of paper products. Their work involves the development of improved quality printing papers from various available pulps. Setting up requirements for these higher grade products is also included in their responsibilities.

This division is responsible for the development of coated papers for the printing industry and the development of new paper products other than those for the printing industry. It includes the development of processes and process layout for large-scale manufacture of new products.

Look, Parents Magazine, True Confessions, Newsweek, Real Story, Sports Afield and Motion Picture are among the magazines drawing on Mando for coated paper supply. The company has developed its own high-speed coater and also is using a new and improved Waldron coating machine. High-speed coating off the paper machine has one obvious advantage to this company because when, and if, the market warranted such expansion, it could feed coaters with paper from an increased number of machines from its Minnesota and Ontario mills.

Installation of a new 6-stage kraft bleaching and 4-stage sulfite or alternate groundwood bleaching plant, designed by Hardy S. Ferguson, and a new water treatment plant at International Falls, go hand in hand with the up-grading of Mando's paper products and the work being carried on in the research department.

The Insulite research group deals with structural and insulating products. It is primarily concerned with making mixtures of fibers and chemicals, forming mats or boards, pressing, drying, and testing. Their primary goal is the development of new products, improvement of the quality of present products, and the reduction of manufacturing costs. The group is prepared to investigate any possibility, from insulation batts to hardboard.

A new idea can be tried by making small hand-sheets, and further developed

S. J. O'CONNOR (left), Manager of By-Products Sales for Mando, and G. H. HARDISTY (right), Manager of Commercial Research. Mr. O'Connor attended American University in France; formerly was with Johns-Manville; will sell expected pulp by-products. Research in merchandising and advertising methods by Mando is responsibility of Mr. Hardisty, former Assistant Treasurer, who came from Illinois.

EDGAR A. LAURING (left), Supervisor of Insulite Converted Products Research for Mando, and WM. H. BARRETT (right), heads Experimental Machine Design Division of the Research Dept. Mr. Lauring was a medical student at U. of Minnesota but graduated as chemical engineer and started with Mando as a tester. Born on a Minnesota farm, Mr. Barrett has been with Mando for 20 years, helped develop Insulite wet-end press unit, coating machine and other products of company shops.

HORACE H. LAGERPUSCH (left), is Supervisor of Coating Division of Mando Research Department, and DR. GLENN C. KIMBLE (right) is Supervisor of Insulite Research. Mr. Lagerpusch, born in Brunswick, Mo., educated in Keokuk, Ia., attended Knox, U. of Illinois and MIT, and was with Mead Corp. Container Corp. of America, and a civilian engineer with War Department. Dr. Kimble attended Nebraska, Wesleyan, Iowa State and the Paper Institute at Appleton, and was research chemist with an Ohio boxboard company.

VIEWS IN NEW LABORATORY at International Falls, Minn.:

Left: Tending side of an experimental supercalender being used on coated paper.

Upper right: Assistants A. Knapp and R. O'Hara and Edgar Lauring (right, Supervisor of Insulite Converted Products Research, are operating pilot plant high speed insulation board coating machine, which was developed by Mando staff. Features of this machine are being patented and a production unit is expected to be put into operation at International Falls in 1948.

Lower right: Dmitri Stancioff and Edgar Zimmerman are operating a pilot plant which prepares coating colors.

by making the product in ton lots on pilot plant equipment. The final step is a trial on mill machines in cooperation with the production department. The Insulite research group has the equipment and the skilled men for carrying a problem through all of these stages.

The Insulite converted products research division is primarily concerned with the conversion or treatment of insulation board products for special purposes. This unit takes over where the work of the Insulite group leaves off.

The major projects under consideration include decorative board, vapor barriers, exterior weather resisting finishes, flameproofing, acoustical products, veneers, hard surfacing, and the like. The group also develops new uses, applications and improved methods of fabrication.

Experimental research work is done on impregnation and surface coating, using resins, plastics, asphalts and any materials available for this type of work.

The experimental machine design group's principle function is the developing, designing and building of special machines and equipment for the manufacture or converting of paper and insulating products. The group is made up of engineers and mechanics specializing in creative machine design and machine construction.

For the fabrication work, there is a shop equipped with lathe, Do-All contour machine, drill press, universal milling machine with a large assortment of attachments and cutters, electronic welding machine and numerous hand tools.

Mobile Waterway

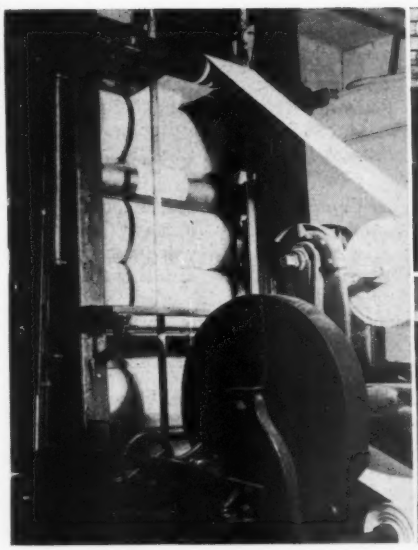
Deepening of Chickasabogue Creek, which serves the Hollingsworth & Whitney paper mill at Mobile, Ala., is being effected by the U. S. Army Engineers.

A contract was let for the construction of the first lock in the Pearl river canal, which will serve the Gaylord Container Corp. at Bogalusa, La. The contract was for $1,795,696.80 with completion in 600 calendar days. The canal will provide a seven-foot depth navigation to Bogalusa.

Chinese on Mill Staffs

Working with other employees in various departments of the Powell River Co. at Powell River, B. C., is Paul Hsi of Shanghai, who will soon return to China with a first hand knowledge of paper manufacture. A number of other Chinese, sent by their government, have worked or are working with other paper companies in U. S. and Canada.

HERE an experiment is being conducted in distillation of crude turpentine, by-product of the kraft pulp process, at the new laboratory of Minnesota & Ontario Paper Co., at its International Falls, Minn., operations.



Maintenance Costs

A SYSTEM FOR HANDY, COMPLETE INFORMATION

By E. H. Barton
Economist, Pulp Division,
Weyerhaeuser Timber Co.,
Longview, Wash.

What makes our maintenance costs so high?

What has been the maintenance on such and such a piece of equipment for this year?—For last year?—Or since it was installed?

Should a particular piece of equipment be replaced by an improved model? Do the present maintenance costs justify this expenditure?

These, and similar questions, are readily answered within the Pulp Division of the Weyerhaeuser Timber Company.

It only takes a few minutes after any such question is asked to present a complete factual history of the maintenance cost by months, or by yearly totals, for a particular piece of equipment, or for a department of the plant, or for the plant as a whole. The furnishing of such information is made possible by the Accumulative Maintenance Cost Record System which the company has been keeping since 1931.

The primary requisite of this or any cost system is to have a simple method whereby the units of equipment or sections of the plant may be referred to by the use of symbols. The system used in the Pulp Division is to divide the entire plant into "Divisions" which represent the major functional units of the manufacturing process.

Within each of these divisions there may be one or more distinct units of the process. These subdivisions are called "Departments."

These divisions and their departments are each assigned a number as indicated in Table 1.

TABLE 1

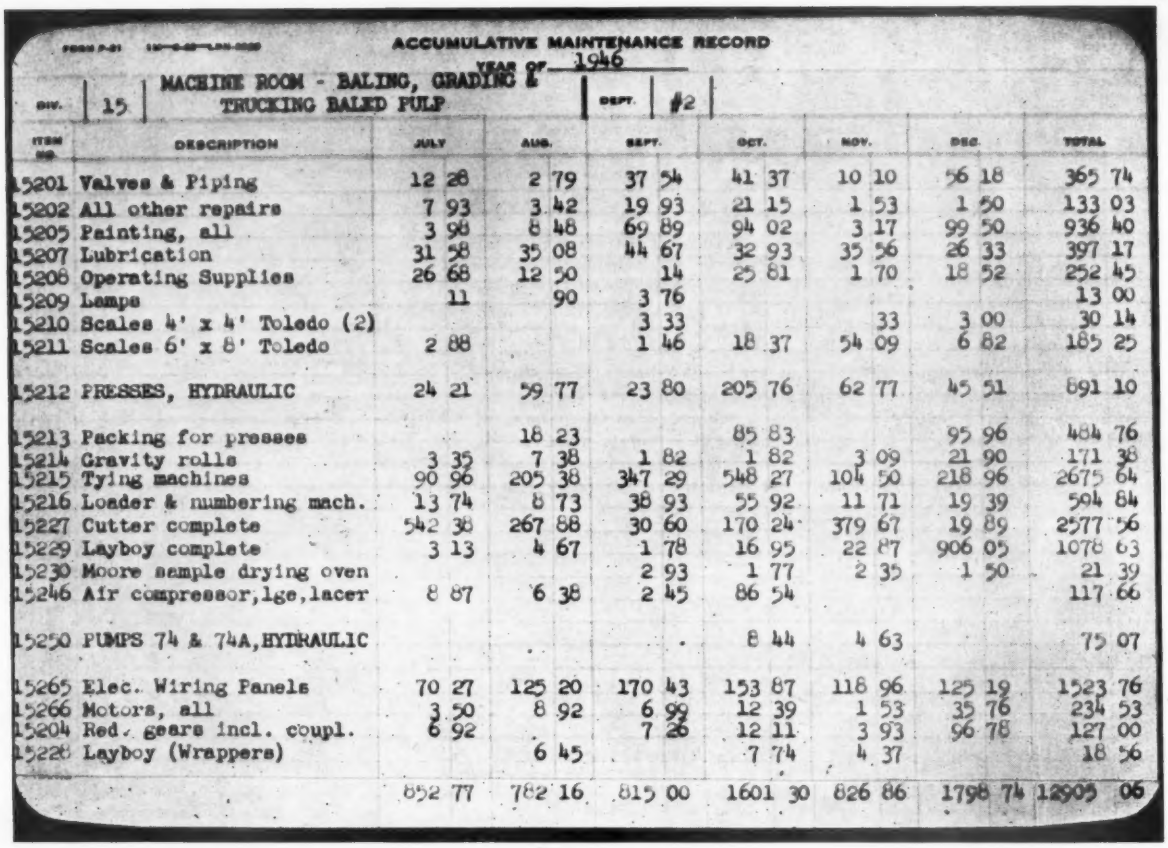
Division and Department Index	D I V	D E P T
Unbleached Division		
Acid Plant	13-	1
Digesters	13-	2
Blow Pits	13-	3
No. 1 Screen Room	13-	4
Screenings	13-	5
Sewage	13-	6
Recovery System	13-	8
Conveying & Storing	13-	9
Bleached Division		
Chemical Preparation	14-	1
Bleaching	14-	2
No. 2 Screen Room	14-	3
Machine Room		
Drying	15-	1
Baling	15-	2
Roll Packaging	15-	3
Wood Preparation		
Log Barking	45-	1
Log Handling	45-	2
Headrig	46-	3
Chipping	46-	4
Conveying & Screening	46-	5
Filter Plant		
Settling Basin	83-	1
Filtering	83-	2
Electricity		
Turbine (Machine Room)	8-	1
Manufacturing Burden		
General Items	89-	0
Mechanics & Carpenters	89-	1
Yard	89-	6
Electricians	89-	7
Laboratory	89-	8
Storeroom	89-	9
Fixed Charges		
Watermen & Fire Protection	90-	4
Shipping		
Rail	91-	1
Cargo	91-	2
General	91-	3

Index of Item Numbers

The next step is to group and list all the items in each department of each division for which maintenance cost records are desired and assign an item number to each one. The item numbers used by the Pulp Division are made up of 5 digits. The first two digits indicate the division; the third, the department and the last two, the individual item.

An example of this is shown in Figure 1, which is a reproduction of the Cost Record Card for one of the departments of the machine room and lists all the item numbers in that department. The first two digits of the item number indicate that these items are in Division

HERE'S HOW operations executives at the Longview, Wash., mill of Weyerhaeuser Timber Co. use maintenance records: Upper view (left to right): Lowell Edwards, Plant Engineer; Paul Miescke, Office Manager; Svarre Hazelquist, Technical Director, and William Haverman, Sulfite Superintendent, are in a huddle over some material changes shown in the Detail Maintenance Folder. Mr. Edwards is holding the Maintenance Record card for which more detailed information has been asked. Lower view: Al Leese the Accountant, is digging out from the Detail Maintenance file a specific Detail Folder in answer to a question from Mr. Miescke, and Mr. Haverman. The file for the Maintenance Record Card is to the left. A stack of these cards are before Mr. Miescke and a Detail Folder lies on the table in front of Mr. Haverman.



ACCUMULATIVE MAINTENANCE RECORD

YEAR OF 1946

DIV. 15 — MACHINE ROOM - BALING, GRADING & TRUCKING BALED PULP — DEPT. #2

ITEM NO.	DESCRIPTION	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
15201	Valves & Piping	12 28	2 79	37 54	41 37	10 10	56 18	365 74
15202	All other repairs	7 93	3 42	19 93	21 15	1 53	1 50	133 03
15205	Painting, all	3 98	8 48	69 89	94 02	3 17	99 50	936 40
15207	Lubrication	31 58	35 08	44 67	32 93	35 56	26 33	397 17
15208	Operating Supplies	26 68	12 50	14	25 81	1 70	18 52	252 45
15209	Lamps	11	90	3 76				13 00
15210	Scales 4' x 4' Toledo (2)			3 33		33	3 00	30 14
15211	Scales 6' x 8' Toledo	2 88		1 46	18 37	54 09	6 82	185 25
15212	PRESSES, HYDRAULIC	24 21	59 77	23 80	205 76	62 77	45 51	891 10
15213	Packing for presses		18 23		85 83		95 96	484 76
15214	Gravity rolls	3 35	7 38	1 82	1 82	3 09	21 90	171 38
15215	Tying machines	90 96	205 38	347 29	548 27	104 50	218 96	2675 64
15216	Loader & numbering mach.	13 74	8 73	38 93	55 92	11 71	19 39	504 84
15227	Cutter complete	542 38	267 88	30 60	170 24	379 67	19 89	2577 56
15229	Layboy complete	3 13	4 67	1 78	16 95	22 87	906 05	1078 63
15230	Moore sample drying oven			2 93	1 77	2 35	1 50	21 39
15246	Air compressor,lge,lacer	8 87	6 38	2 45	86 54			117 66
15250	PUMPS 74 & 74A,HYDRAULIC				8 44	4 63		75 07
15265	Elec. Wiring Panels	70 27	125 20	170 43	153 87	118 96	125 19	1523 76
15266	Motors, all	3 50	8 92	6 99	12 39	1 53	35 76	234 53
15204	Red. gears incl. coupl.	6 92		7 26	12 11	3 93	96 78	127 00
15228	Layboy (Wrappers)		6 45		7 74	4 37		18 56
		852 77	782 16	815 00	1601 30	826 86	1798 74	12905 06

FIGURE 1

15, the machine room. The third digit, 2, indicates that they are in Department 2, as shown at the top of the card and the last two are for the individual items.

Wherever possible, items which are common to all departments are assigned the same last two digits making up the item number as described above. For example, in Figure 1, the item numbers ending in 01 to 09 inclusive and 65 and 66 are common to nearly all departments.

Some equipment is common to two or more departments and when possible similar numbers are applied to such items. Pumps in all departments will be found in 50's, etc.

Maintenance Record Card

After a complete index of item numbers in each department has been made up, then an Accumulative Maintenance Record Card, similar to that shown in Figure 1, is made up for each department of each division and all the item numbers applying to each are listed in the left hand column.

One side of the record card, shown in Figure 1, carries the total cost of each item by months for the first six months and the reverse side shows the last six months and the total for the year.

Similar cards are kept to show the yearly totals of each of these items. On these cards the columns are headed by the year, instead of the month. Each card has column for seven years on each side.

Maintenance Detail Folder

After all the record cards have been made up, a file folder is prepared for each item number. In these folders are filed each month the detailed labor material charges against the equipment item whose name and number are shown on the folder.

Three separate forms are used to record these charges. One is the Detail Job Labor Summary. A sample of this is shown in Figure 2, the October labor charges for item 15212. On this form is posted the time charged by the various maintenance men for ordinary maintenance service to a specific item. The employee responsible for such repair can always be determined from the clock or man number shown on this form. The totals of these Labor Summaries balance with the total maintenance labor during any one month.

The next form in this folder is the Material Summary. Figure 3, illustrates the sheet used in October for item 15212. This form is used for all charges from the plant storeroom.

Charges other than labor and storeroom material are charged direct to the item to which it applies. These charges are detailed on a Voucher Summary form which is included in the folder.

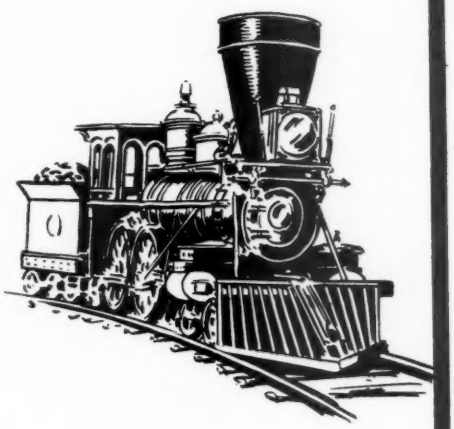
These three features; a complete numerical index of equipment items by plant departments and divisions, an Accumulative Maintenance Record card for each department of every division and a Maintenance Detail Folder for every item together with its three inserted forms, are the principle parts of this maintenance cost record system. With this system cost facts are quickly mare available for any piece of equipment and for any period of time.

Suppose the question is asked, what have been the maintenance costs on the machine room hydraulic presses for the past year and also on hydraulic pumps which go with them?

These items are 15212 for the presses and 15250 for the pumps. A glance at the car shown in Figure 1, shows the total maintenance cost of these items for the last six months of 1946 and the total for the year. On the reverse side of this card will be found the monthly costs for the first six months. The highest monthly cost of the year was for October which amounted to $205.76. In order to analyze the details of the charges making up this total, it is necessary to refer to the Detail File Folder for that item.

The Detail Job Labor Summary shown in Figure 2, will be found in the folder for item 15212. It shows that a total of 85 hours amounting to $141.49 were charged against this item in October.

The Material Summary for item 15212 shown in Figure 3, will also be in this folder. It shows the materials used in October for these presses amounted to $64.27. The sum of these labor and material charges amounted to $205.76 which is the amount shown on the maintenance card in the October column for item



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The choice of a supply source for your fiber requirements and a distributor for your product is equally easy—and important. Bulkley, Dunton's outstanding service facilities, its long-established world-wide connections and century-old experience are some of the many factors which influence mill executives to entrust their purchasing, distribution and export problems to this alert, progressive organization.

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15212. Details of charges for other months and for the pumps can be readily found in the same way.

If management should want to know the maintenance costs on a particular item which cover a period of years, it is a simple matter to pick out the appropriate Accumulative Maintenance Record card which shows that item by yearly totals. These specific figures can be quickly tabulated and totaled. If more information is needed on any particular year's total, then reference to the maintenance card which carries the monthly totals for that year and the maintenance detail folder for the same year will supply all the data which made up that yearly cost.

An example of this information by yearly totals is given in Table 2:

TABLE 2

The following tabulation was taken from yearly maintenance cards and give the complete cost record for these pieces of equipment. Prior to 1938, the costs on the pumps were, included with the presses. An analysis made in 1937 indicated, that those should be separated as heavy expenses on the pumps were felt to be a contributary factor to the total maintenance cost. Some major alterations were made in 1938 on both pumps and presses and, as the record shows, a pronounced drop in the yearly costs resulted.

DETAIL OF MAINTENANCE COSTS

Year	*Hydraulic Presses* No. 15212 *Amount*	*Pumps Nos. 74 & 74A Hydraulic Press* No. 15250 *Amount*
1932	$ 1,010.54	$
1933	1,793.20	
1934	1,908.58	
1935	1,049.49	
1936	2,440.97	
1937	5,011.76	
1938	2,128.49	1,862.57
1939	1,116.50	152.10
1940	1,090.13	31.61
1941	688.18	59.91
1942	592.45	12.84
1943	162.55	11.03
1944	307.64	42.39
1945	1,085.69	5.35
1946	891.10	75.07
TOTAL	$21,277.26	$2,252.87

Note: The original cost of hydraulic press. Item No. 15212, was $17,156.89 with 25-year life. Net book value at December 31, 1946, was $7,557.11.

FIGURE 3

MATERIAL SUMMARY

	DESCRIPTION OCT 1946	AMOUNT	DATE	REQ. NO.
6	ONLY RING FOR HYD PRESS CHEV PKG	20 64		1130
1	ONLY TOP RINGS HYD PRESS CHEV PACK	4 45		1130
1	ONLY BOTTOM RINGS HYD PRESS CHEV P	4 75		1130
1	ONLY 3/8 IN 90 DEG BLACK ELLS	8		12 8
1	ONLY 3/8 x 2 IN BLK NIPPLES	3		12 8
1	ONLY VALVE CYLINDER HEAD	5 60		22 40
1	ONLY NO 23 SIDE PLATE	3 00		13 65
1	ONLY NO 24 MAIN VALVE	12 32		13 65
1	ONLY NO 41 LOW PRESSURE CYL	6 20		13 66
1	ONLY NO 20 PISTON	5 50		13 66
1	ONLY CUP LEATHERS 434 2 1 2x1/2x7/	50		25 18
2	ONLY 3/4 IN JAM NUTS	6		25 33
5	FT 3/4 IN ROUND BRASS BAR STOCK	23		23 31
4	FT 1 IN ROUND BRASS BAR STOCK	30		23 31
4	ONLY 1/2 x 1 3/4 IN CAP SCREWS	15		23 33
1	ONLY 3/8 x 5 1/2 IN MACH BOLTS	3		23 35
1	ONLY NO 5 3 IN TAPER PINS	43		23 38
		64 27 *		

The manager asked for the complete maintenance cost by years for the machine room hydraulic presses and their pumps since they were first installed and the relation of these costs to the original cost and the present book value. In a very few minutes this tabulation was prepared and laid on his desk for study.

Another use is made of this cost record system. In order to keep closer control of all maintenance costs and to stimulate greater cost consciousness on the part of those responsible for maintenance work, a conference meeting of the mill manager, superintendent, plant engineer, master mechanic and other key men is held each month. All the maintenance cards and the file drawer of the detail folders are brought to the meeting for ready reference. The office manager and the accountant are present to explain any details and answer questions. Any unusual or questionable costs are noted and their details discussed.

As a result of the collective thinking and group discussion in these meetings, many ideas for cost improvement, better maintenance and greater efficiency have originated.

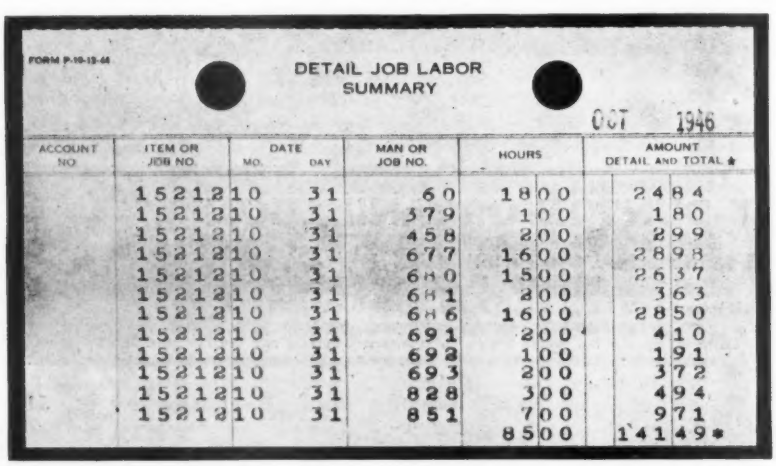
Quite often as a result of such discussions, these maintenance cards and supporting data in the detail file folders are shown to the lead men in the maintenance crews. This has resulted in making them conscious of maintenance costs and has stimulated their thinking in devising ways of doing their jobs.

When this cost system was first started, in 1932, the posting of the charges was done by pen and ink. Even though this was a rather detailed and laborious procedure, yet the benefits derived from closer cost control was felt to far over weigh the cost of compiling this data. This type of compilation lends itself very well to tabulating machine procedure. At the present time all these records, except posting the Maintenance Record cards, are made by use of the tabulating machines.

Increased efficiencies in plant operation and closer attention to plant maintenance costs are essential to alert management. This calls for a cost record system which is complete in its details, simple to compile and to analyze. It should be readily accessible and designed to provide factual data quickly at any time.

The system described above has been in use by the Pulp Division of the Weyerhaeuser Timber Company for 15 years. Experience has shown that it is one method of keeping close control of maintenance costs, of eliminating all guess work, and of having essential facts available to present when they are needed without spending hours of labor in digging them out of miscellaneous records.

FIGURE 2



FORM P-10-13-44

DETAIL JOB LABOR SUMMARY

OCT 1946

ACCOUNT NO.	ITEM OR JOB NO.	DATE MO.	DATE DAY	MAN OR JOB NO.	HOURS	AMOUNT DETAIL AND TOTAL *
	1521210	31		60	1800	2484
	1521210	31		379	100	180
	1521210	31		458	200	299
	1521210	31		677	1600	2898
	1521210	31		680	1500	2637
	1521210	31		681	200	363
	1521210	31		686	1600	2850
	1521210	31		691	200	410
	1521210	31		692	100	191
	1521210	31		693	200	372
	1521210	31		828	300	494
	1521210	31		851	700	971
					8500	14149*

CERTIFIED PULP TESTERS' Bureau of New York issues this up-to-date list of approved pulp testers:

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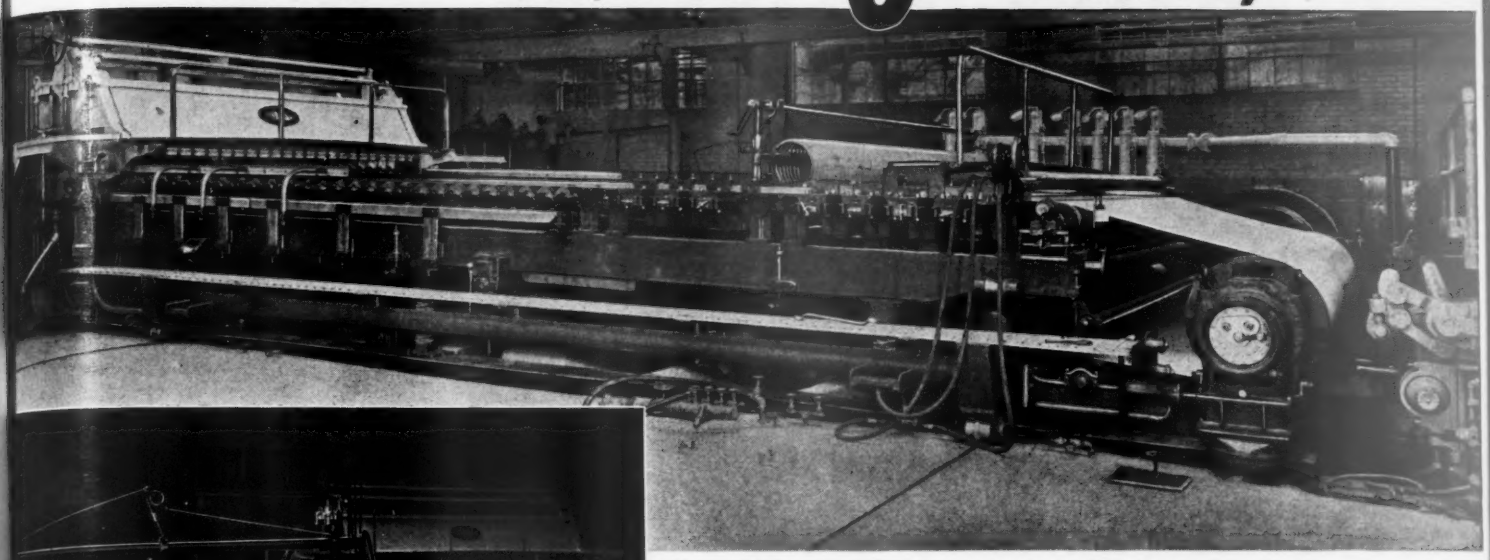
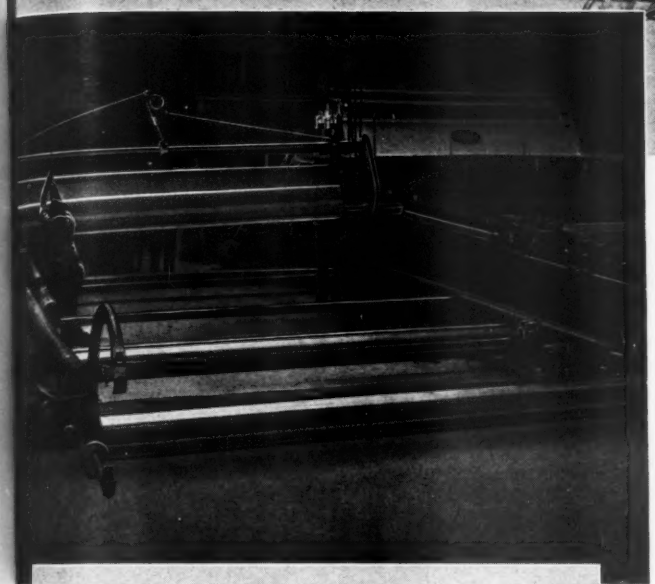
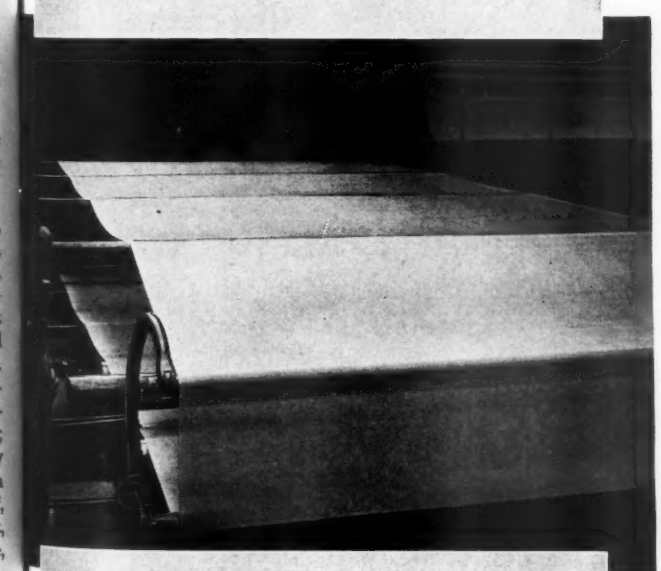


No. 2. 172" Puseyjones Fourdrinier at the P. H. Glatfelter Company, Spring Grove, Pa., with Fourdrinier Wires installed by "Rapi-Drape" method.



Wire Holder containing new wire and all inside poles. This is stored in tending aisle while machine is in operation.



Wire completely draped on undercarriage ready to install. Motor-operated undercarriage is rolled into tending aisle, where wire is draped from overhead traveling crane, then rolled back to operating position.

IMPROVED RAPI-DRAPE WIRE CHANGER

The new improved "Rapi-Drape" method for installing Fourdrinier wires, exclusive with Puseyjones, shortens handling time, reduces production losses to a minimum. Earlier installations have been greatly improved by location of actuating mechanism on back side, reducing height above sills and providing more convenient tending operation.

With the new improved "Rapi-Drape" Wire Handling, wires are draped in the tending aisle then mechanically installed in operating position. The back of the Fourdrinier is permanently supported on frames. A movable carriage, motor operated, supports the front side in perfect alignment at all times. There is no danger of deflection and distortion as experienced with complete removable or cantilever type Fourdriniers.

The Fourdrinier proper remains in operating position during the entire wire change. The only parts requiring removal are the dandy rolls, deckle and cut squirts. It is unnecessary to disconnect shake mechanism, suction boxes or shower pipes.

Before ordering your new machine or replacing your present Fourdrinier Wet End, investigate this new and improved time-saving feature. Include "Rapi-Drape" Wire Handling in your specifications as regular equipment. Write for full details.

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THE SIGN OF TRADE MARK SUPERIOR QUALITY

RECOVERY OF FIBER BY FLOTATION

By
H. R. Clodfelter

Crown Zellerbach Corp., West Linn, Ore. (picture at right).

This paper was entered in 1947 Shibley Contest in which young employes of U. S. Pacific Coast mills compete and was presented at TAPPI meeting in Bellingham, Wash., early this year.

Ever since the paper mill man became conscious of the savings of fiber, filler and other components of papermaking stock that could be reclaimed from the white water normally discharged to the sewer from the mill there have been proposed, installed and operated—more or less satisfactorily—several methods of fiber recovery known as savealls. Some of these are the inclined screen, sedimentation basin, settling saveall, the vacuum filter saveall and the flotation saveall.

There are two types of flotation savealls, one that operates with partial vacuum above the flotation chamber while the other is direct to the atmosphere. The latter one will be discussed in this paper with the intent to offer the practical experiences of operation as met in the installation under observation and not go deeply into the theory of the flotation of fiber.

Twenty or 25 years ago Nils Pederson, a Norwegian engineer, conceived the thought of clarifying white water by finely dispersed air bubbles in the low density white water and thus obtain separation of the solids from the water by flotation in a manner similar to flotation of ores in the mining industry. Attachment of the small air bubbles on the surface of the fiber and filler would reduce the overall specific gravity of the stock so that it would rise to the surface of the water to be removed by scrapers. Results were disappointing as air alone did not float the very finely divided materials. However, after Karl Sveen suggested the use of a colloidally active glue that he had prepared for a flocculating aid, the saveall has been successfully operated under many different conditions. About 1937 the Sveen-Pederson saveall was introduced into the United States where it has received considerable attention in the Eastern papermaking states and in the past few years several paper companies on the Pacific Coast have placed one or more of this new type of saveall in operation.

For the past year we have had experience with a Sveen-Pederson saveall clarifying white water from a paper machine that is producing a high groundwood content sheet with the groundwood pulp varying from 60 to 80% of the fiber furnish and a filler content of 7.5% to 18%. The white water, made up of wire pit overflow and suction box water, has a density from 6 to 9 pounds per 1,000 gallons and flows at an average rate of 425 gpm. From this the recovery of fiber and filler is 3600 to 4500 pounds per day of which 18% is filler.

After dilution to a constant volume of 575 gpm. (with clarified water returned by gravity to the flowbox supplying the saveall feed pump) the white water is pumped under a pressure of 30 to 35 pounds to a retention chamber. (*See Figure 1.*) Air is introduced to the inlet of the pump by means of recirculating a small portion of the water thru an injector. The injector and pump action disperses the air, a part of which dissolves in the white water during the time retained in the retention chamber. Retention is theoretically one minute but due to insufficient baffling is actually in the order of 35 to 40 seconds. Upon leaving the retention chamber the white water goes into the saveall through an annular port covered by a heavy bronze plate that maintains a constant back pressure. The sudden high velocity release of pressure through the small orifice at this point produces a small bubble type of foam. Glue added to the white water at this point with thorough mixing resulting from the turbulence created through release of pressure acts as a protective colloid and stabilizes the foam. The white water then flows over a dam into the quiet zone of the flotation chamber where the solids rise to the surface to be scraped off by blades moving in the same direction of flow. Removal of clarified water is through regularly spaced holes in tapered pipes that extend laterally across the bottom of the saveall and then upward into the clarified water chamber. Each outlet is provided with an adjustable sleeve that may be raised or lowered to regulate the level in the flotation chamber.

Recovery from the saveall is not limited alone to the reclaimed stock since the clarified water (normally less than 0.2 to 0.3 lbs./1000 gal.) is valuable for reuse on the paper machine showers to reduce the consumption of filtered water and at the same time raise the temperature in the headbox and on the wire which usually affords higher operating speeds and improved characteristics in the sheet.

Reclaimed stock at a consistency of 2% or more is returned directly to the stock chest supplying the machine and does not reduce the consistency of the furnish materially. Clarified water is now used on the machine wire showers, to dilute stock at the equalizer, with the excess as makeup to a central white water tank. Approximately 150 gpm. of the clarified water is now directly used by the paper machine although this amount is expected to increase in the future. Substitution of the clarified water for a portion of the filtered water provides an increase of temperature in the headbox from 5 to 10 degrees F. depending on the grade of paper, operating conditions, and season of

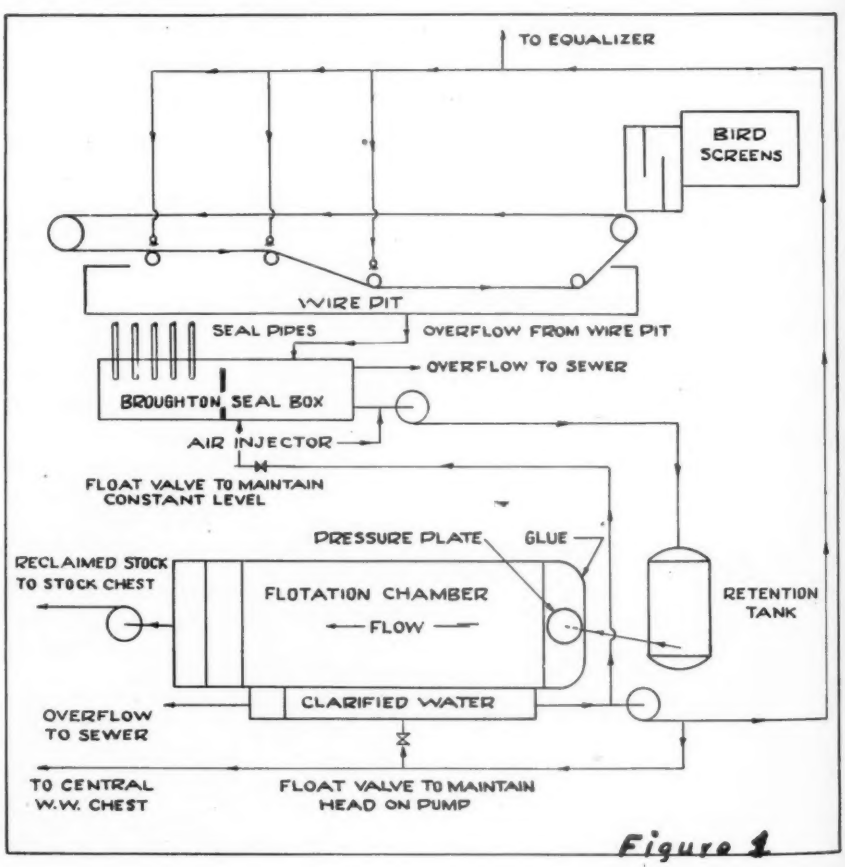

Figure 1

IT TAKES AN EXPERT!

Balancing the right fibre and the best process against the requirements of a specification paper is something our technical staff does with the greatest of ease. Years of experience are back of these experts' skill in creating papers to meet your specifications. Constant research and repeated applications of specialized knowledge *keeps* them experts.

You're more than welcome to bring *your* development problems to our Technical Service Division. Their recommendations can be implemented from a complete range of papermaking fibres . . . An inquiry to one of the sales offices listed below is the first step.

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BROWN CORPORATION, 906 SUN LIFE BLDG., MONTREAL 2, P.Q., CANADA

the year. The effluent is normally clarified to such a degree that even with highly colored papers the residual color is not considered to be detrimental for pulp washing in the pulp mills.

The saveall as installed has a rated capacity of 600 gpm. and occupies an overall space, including the retention chamber, of 42 feet long, 13½ feet wide and 8 feet high. Materials of construction are corrosion resistant with all surfaces smooth so that accumulation of dirt and growth of slime is negligible. The tub is of glazed tile; pipes, chains and valves of stainless steel, pressure plate of bronze and scrapers of hardwood. The only maintenance required is the periodic oiling of the motors and of the rollers and chains carrying the scrapers. The scraper blades are spaced 5 feet 8 inches apart and have a speed of 6 feet per minute. The supervision required by the saveall is occasionally checking the clarified water and the glue flow.

Power requirements consist of a ½-h.p. motor to operate the scrapers, a 20-h.p. motor and a 30-h.p. motor to run the inlet and outlet pumps. Total consumption of electricity is 33 kilowatts.

The Sveen glue used as a flocculating aid is prepared from a medium grade of hide glue, resin size, alum for pH control and formaldehyde to reduce decomposition from bacterial action to a minimum. Concentration used is 0.05 pounds per gallon. After aging for 24 hours the glue is pumped to storage tanks near the machine where it is added to the headbox as well as to the saveall by means of constant head filter feeders.

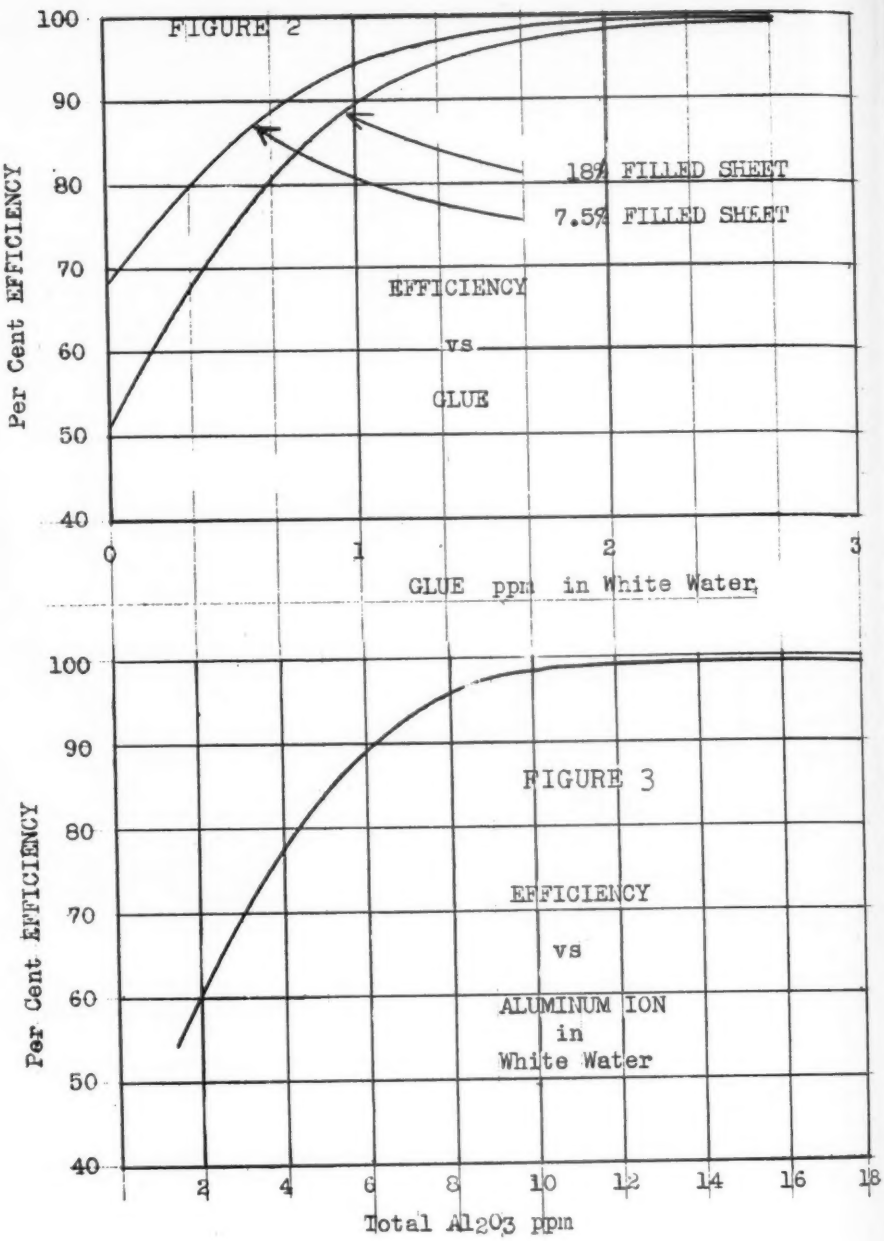
Efficiency of the saveall is affected by several variables of considerable technical interest to determine why fluctuations occur. The term efficiency as used here today is calculated from the ratio of the amount of reclaimed stock to the stock entering the saveall.

Operating variables of any relatively complex system will cause much needless trial and error to obtain satisfactory operation unless a reasonable understanding of the problem involved is possessed and this is true with the flotation saveall. From experience gained by observation, testing and manipulation of the various components of the stock and saveall four factors that influence the efficiency to the greatest extent have been evolved. They are:

1. Necessity of introducing air into the white water under controlled conditions.
2. Amount of glue and need for a flocculating aid.
3. Requirement of a flocculant, normally the aluminum ion.
4. pH range and its influence.

As to be expected a sufficient amount of dispersed air is necessary to produce flotation for with the lack of air the efficiency will drop nearly to zero. No attempt has been made to actually evaluate the air flow and efficiency of aeration but as a factor of safety an excess of air is added at the injector.

Glue as a flocculating aid reacts almost instantaneously with the white water to produce a floc that immediately begins to rise to the surface. A simple test for the degree of flocculation and clarification is to fill a graduate with white water from the headbox of the saveall and note the creaming time and clarity of the water. Increase of efficiency is very rapid with increasing amounts of glue up to a maximum when more glue will not improve operation. Addition of 1.7 ppm. of glue (dry weight) based on white water flow from the machine will raise the efficiency from 60 to better than 98% on the 7.5% filled sheet. More glue is required for a heavier filled sheet as shown in *Figure 2*.

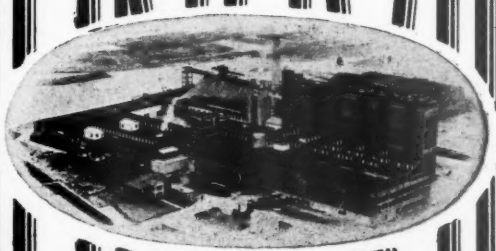


Normally a small excess of glue is purposely added to provide for sufficient flocculation during periods of increased flow of the white water or higher solids content with a glue dosage of 2 ppm. or 0.5 lb./ton of paper being supplied when running the lighter filled sheets and 4 ppm. or 1.0 lb./ton with the heavier filled grades.

In addition to the two mentioned factors, it is necessary to provide a minimum concentration and preferably an excess of some flocculant if the saveall is to clarify the white water with any degree of efficiency. Through several metals such as copper, magnesium, iron, nickel, chromium have the ability to form insoluble hydroxides that will floc under favorable conditions the floc produced by the aluminum ion is to be preferred since it is probably the cheapest, imparts the least amount of undesirable properties to most papers and is the best understood of the floc substances.

Papermakers' alum, usually given as $Al_2(SO_4)_3$ with 18 parts of water is the main source of the aluminum ion though it may be supplemented by sodium aluminate. From data acquired during several months of investigation it has been determined (see *Figure 3*) that for maximum efficiency of saveall operation the minimum total aluminum ion concentration in the white water is in the order of 10 ppm. expressed as Al_2O_3 and that be-

SOUNDVIEW



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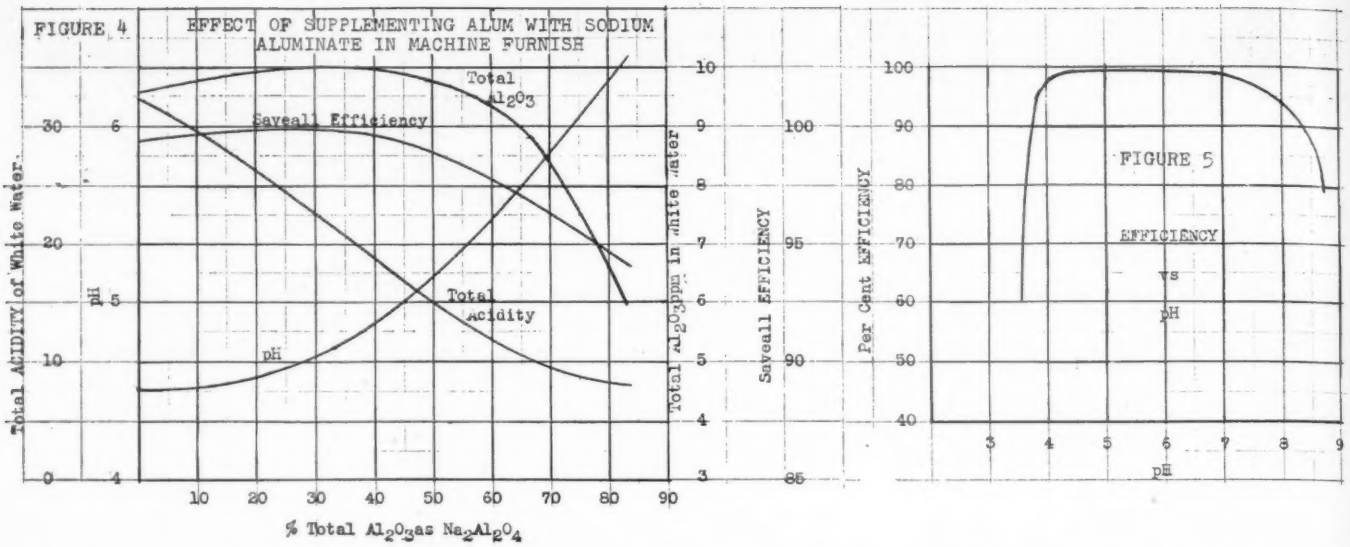


low this concentration the efficiency decreases quite rapidly. Normally the furnish and machine conditions afford an average total alumina content of 15 to 17 ppm in the white water. It is to be noted that neither alum nor sodium aluminate added to the white water immediately before the saveall will increase low efficiency of saveall operation caused by a shortage of the aluminum ion. This indicates that time is too short for the floc to form and that the nature of the floc formation is similar to that of water filtration.

Figure 4 graphically illustrates the effect of supplementing alum with sodium aluminate in sufficient amounts to maintain a constant concentration of the aluminum ion in the paper machine furnish. The basis for the one set of conditions given was the amount of alum necessary for efficient clarification with the minimum concentration of total alumina in the white water. As to be expected, increasing the quantity of sodium aluminate resulted in a lowering of total acidity, expressed as ppm of H_2SO_4, and an increase of pH, both of which could be of some importance with different operating conditions. The curves also show that the total alumina content of the white water raises slightly to a maximum corresponding to a peak in saveall efficiency after which the values of both decline. The reduction of alumina content in the white water is a result of higher retention of aluminum ion in the sheet from the lower solubility caused by increase of pH. Thus there is not sufficient alumina for efficient coagulation of the fiber and filler in the white water.

Figure 5 gives the effect on efficiency of varying the pH of the white water when an excess of aluminum ion is present; i.e. total Al_2O_3 of 15 ppm. Change of pH was effected by addition of carefully controlled quantities of either sulphuric acid or sodium hydroxide to the white water in the Broughton seal box so that only the white water was treated and operating conditions on the machine were affected to the minimum. Here is shown that pH, thru a range of 4.2 to 6.5 or 7.0, does not greatly influence the efficiency of saveall operation. However, the value of pH becomes more critical as the concentration of total residual alumina is reduced to minimum requirements.

The data just presented shows that the concentration of the aluminum ion in the white water is dependent upon operating conditions of the paper machine and that it is necessary to have present in the white water at least a definite quantity of coagulant to achieve a high degree of efficiency. From this the problem of fiber recovery by flotation is to properly condition the white water from the machine or to alter machine operation so that the white water has the properties essential for efficient clarification. Proper treatment may require the use of a storage chest for the white water where the coagulants and possibly some flocculating aids or pH control reagents can be added. The retention period should provide sufficient flocing time to meet requirements of flotation.

Replacement of Sveen glue with another flocculating aid that would not serve as a source of food for bacteria would be beneficial for a reduction of sliming tendencies that may arise from that reuse of clarified water on the paper machine. The only substitute tried to date is activated silica prepared by partial neutralization of sodium silicate with sulphuric acid. Results so far have not been too encouraging as the high density voluminous floc formed by the activated silica apparently did not include sufficient air to float properly. Operation was unstable and efficiency low. However, activated silica proved to be satisfactory as a flocculant aid for the retention of fiber and filler on the wire. Cost of treatment is slightly lower with activated silica than with glue.

A word of caution to those who are interested in installing a flotation type saveall is that a thorough study be made first regarding the flocculating characteristics of the white water that is being considered for treatment. Some white waters clarify easily while others are more difficult or impossible to clarify by usual methods, also in some cases it may be inadviseable to add a floc forming substance. These determinations can be carried on in the laboratory by jar tests, turbidity meters and other related equipment usually found in the paper mill laboratory.

From the excellent results obtained by operation of the flotation saveall, a brief summary of the advantages of flotation recovery that this paper has attempted to point out and explain are:

1. High efficiency.
2. Reclaimed stock continuously returned to the system.
3. Clarified water steadily utilized on paper machine.
4. Saveall easily cleaned.
5. Continuous operation with minimum of supervision.
6. Low cost of maintenance.
7. Reasonable overall space required for installation.
8. Small brightness drop, especially in groundwood furnishes.
9. No sweetener stock required.

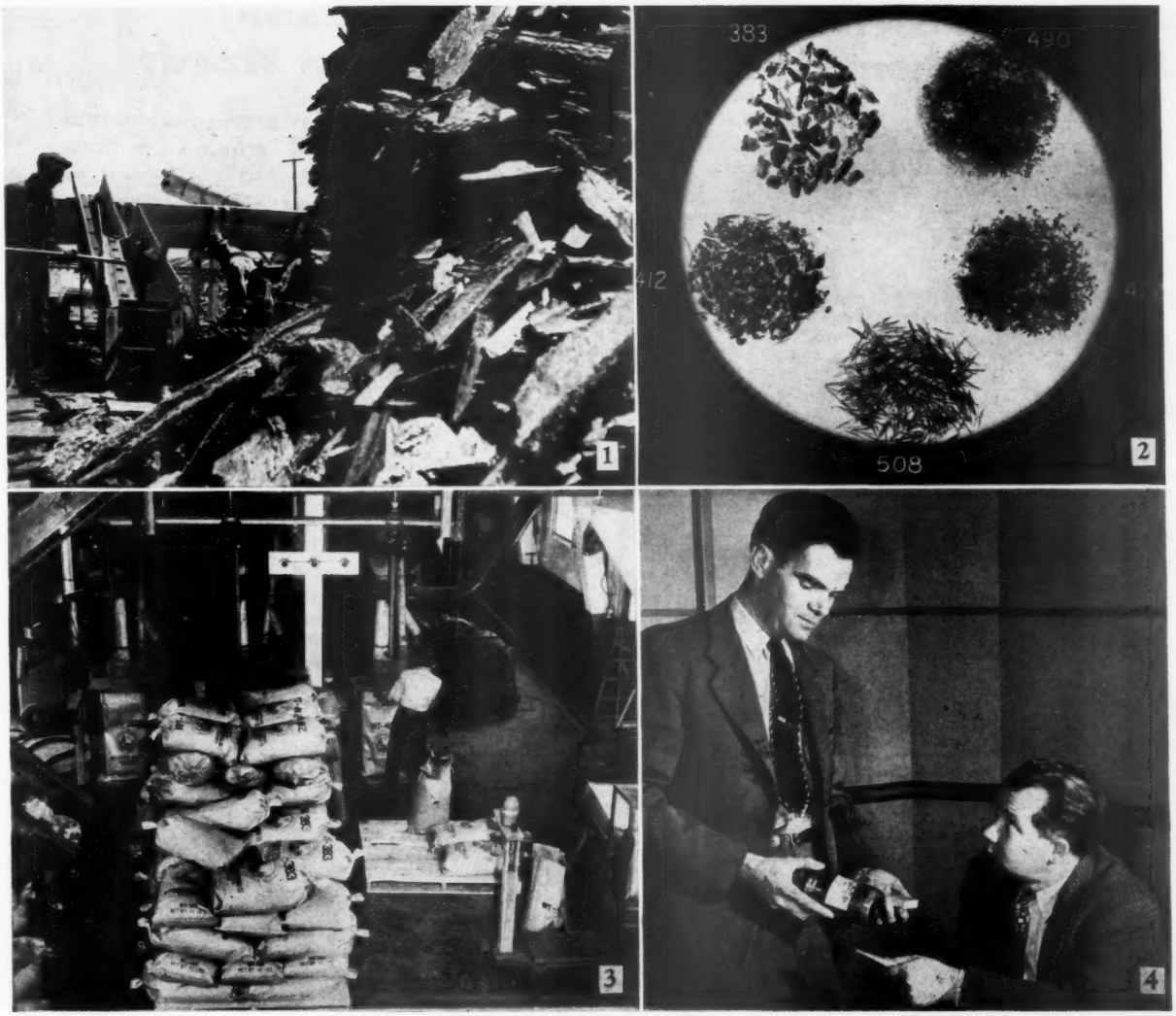
Speakers on Program At Murray Bay Convention

Leaders in the industry on both sides of the border are listed among the speakers for the Murray Bay, Que., convention of the New York-Canadian division of the Superintendents Association, to be held Sept. 8-12.

Ralph G. Johnstone, manager of manufacture, the E. B. Eddy Co., Hull, Que.; A. E. H. Fair, president, Alliance Paper Mills, Ltd., Toronto; E. G. Kirby, of Price & Pierce, Montreal, Robert M. Fowler, president of the Canadian Pulp and Paper Assn., and Dr. Ray deMontigny, technical director, Rolland Paper Co., will be among spokesmen for the industry in Canada.

Bart L. Tidland, director of research, AFL Brotherhood of Paper Makers, Albany, N. Y., will be among U. S. speakers.

General chairman of the conference is J. P. Rolland, Rolland Paper Co., St. Jerome, Que. Chairmen of business sessions will be John D. Kane, Flower City Tissue Mills Co., Flower City, N. Y., and O. E. S. Hedbring, United Paperboard Co., New York.



1. Workmen at the Weyerhaeuser bark products plant, Longview, Wash., shovel bark from a huge pile that formerly would have been of little commercial value. 2. Microphoto shows the five numbered fraction processed in the new bark production plant. The bark products, known as Silvocan, have a variety of established commercial uses, including applications in plastics, glues, insecticides and soil conditioning. 3. Inside the Weyerhaeuser Timber Company's bark products plant. 4. Robert D. Pauley (left), Silvacon products sales manager, discusses methods of utilizing the new material with William A. Van Beckum, assistant manager.

BARK UTILIZATION

A major forest utilization advancement has been achieved and placed in production by Weyerhaeuser Timber Co., Longview, Wash., thus increasing the value of forest material growth per given area. This is the dry processing of Douglas fir bark resulting in products for use in industry and agriculture. Already five products are in commercial quantity production under the name "Silvacon."

Development of the products is the result of years of study, according to Clark C. Heritage, director of the development department.

Preliminary research which led to this use of bark from the hydraulic barking plant of the Longview pulp mill was carried out under Raymond S. Hatch, research director of the Pulp Division.

The company's development department laboratory was set up in Longview in 1942, under management of R. D. Pauley. Processes were developed, in the pilot plant, and early this year a full size plant was built which has capacity of 75,000 pounds per day on a three-shift basis.

A short description of the five products follows:

Silvacon 383 — Predominately flake-like particles of cork, light brown in color, ranging up to ¼-in. in size. Uses include (1) reactive ingredient in phenolic resins; (2) heat curing of food products; (3) decorative displays; and (4) as a soil conditioner.

Silvacon 412—Combination of two basic components of tree bark—cork and lignified fibers presents many possible uses including reactive ingredient in thermosetting molding compounds, absorbent filler for explosives, and magnesite floor ingredient.

Silvacon 508—Consists of stiff fibers of high product purity, composed of the hard tissue of tree mark, commonly described as bast fibers. Uses include ingredient in impact grades of thermosetting molding compounds, magnesite flooring ingredient, absorbent filler for explosives.

Silvacon 472 — Combination of three constituents of bark—cork, lignified fiber and powder has use as active chemical ingredient in phenolic glues, ingredient in match scratcher compounds, reactive ingredient in thermosetting molding compounds.

Silvacon 490—Very finely powdered amorphous particles obtained primarily from highly parenchymous tissue of bark. Uses are as ingredient in insecticide dusts and match scratcher compound.

Another Swedish Mill Reported Shutting Down; Modern Equipment Needed in Scandinavian Woods

Sweden cannot hope to keep pulp mills and sawmills producing on the present scale in that country, according to Mats Schartau, of the Swedish Forest Service, in a recent interfiew with **PULP & PAPER**.

Modern and more efficient machinery and equipment in woods are needed in Sweden to achieve closer and better utilization of forest resources, he said.

Mr. Schartau has observed North American resources and practices on a grandiose tour which already took him to regions as far apart as Florida and Alaska.

He comes from Appelviken, in Lapland, one of the division of Sweden's Norrland, and he confirmed reports previously published in **PULP & PAPER** that the Swedish Forest Service has required a 40% reduction in timebr cutting in Norrland. Most of the timber in that large northern area of Sweden is owned by the government, he said.

He said that plans were being made to close down another Swedish pulp mill when he left his native country. The Robertsfors (fors means stream) pulp mill located north of Ornskoldsvik (vik means bay), one of the larger units of the Mo and Domsjo company was to be shut down and dismantled in order that its timber resources could be divided up among other Mo and Domsjo pulp mills. That company, he said, is the largest industrial enterprise in Northern Sweden.

In the April issue of **PULP & PAPER**, the closing of the Ohrvikens sulfite mill at Burea, near Skelleftea, belonging to the Fors company, was reported. Its shutdown was due to lack of wood. Birger Everitt, formerly in Washington state mills, was superintendent at Burea.

AN INTERESTING SAFETY IDEA and the man who proposed it at the Kenora, Ont., groundwood-sulfite-news mill of Ontario-Minnesota Pulp & Paper Co., Ltd., are shown in this picture. A. J. Cairns, Kenora millwright, proposed the collapsible fan guard seen in the photo on a paper machine winder. It prevents workmen from putting hands or feet across the recess in which the rocker arm rests when the winder is not in operation. In one year, the employes of the M & O and O & M affiliated companies have received $1,600 for ideas for improving operations or for safety ideas.

$100 For This Idea

Because he had a workable idea for the use of sulfite waste in making foundry cores, replacing molasses and linseed oil to an extent, W. B. Graham, foundry foreman, Powell River Co., was awarded a prize of $100.

Other prizes totalling over $200 were distributed among other employes of Powell River Co., recently for making worth-while safety suggestions.

Dow Cuts Prices

A substantial price reduction on Dow Latex 512 has been announced by The Dow Chemical Co. The reduction amounts to about 13% in drums and 21% in tank-car lots.

Dow Latex 512, a styrene-butadiene latex, is used as a binder in fine paper coatings. When combined with soya flour, it produces better pigment binding. With casein, it produces a binder for clay coated papers that is superior for printing ink standout. With starch, it gives increased flexibility and water resistance.

Howard Graham Contacts Mill Technical Directors

Howard Graham, of Crown Zellerbach's Central Technical Department in Camas, Wash., has a special "extra-curricular" duty as the "contact man" with the local technical department in all of the Crown Z mills.

Periodically, Mr. Graham arranges get-together meetings, which are proving so successful that it is now definitely assured that they will continue. These bring the various mill representatives together for discussion of a single important subject or branch of research. For instance, a color symposium was carried on at one of the meetings arranged by Mr. Graham.

R. R. EDWARDS, formerly of the Bathurst Power & Paper Co., Bathurst, N. B., has been appointed assistant resident manager for Pacific Mills, Ltd., at its Ocean Falls, B. C., division, President Paul E. Cooper announces. G. R. Bolton, of Pacific Mills' traffic department in Vancouver, has been promoted to the position of traffic manager for the company.

BRITISH COLUMBIA paper mills produced more newsprint in 1946 than in any year since 1940, according to statistics recently issued. The total production of newsprint in 1946 was 259,921 tons, compared with 253,671 tons in 1945 and a ten-year average of 241,279. In 1940 production was 262,144 tons, and it is expected that this will be surpassed in the current year.

J. HUSTON McCLANE of the Paper Makers Chemical Department of Hercules Powder Co., Atlanta, Georgia, has been transferred to Kalamazoo, Mich. Henry Reeves, sales representative in Kalamazoo, will succeed Mr. McClane as acting manager of the Atlanta office.

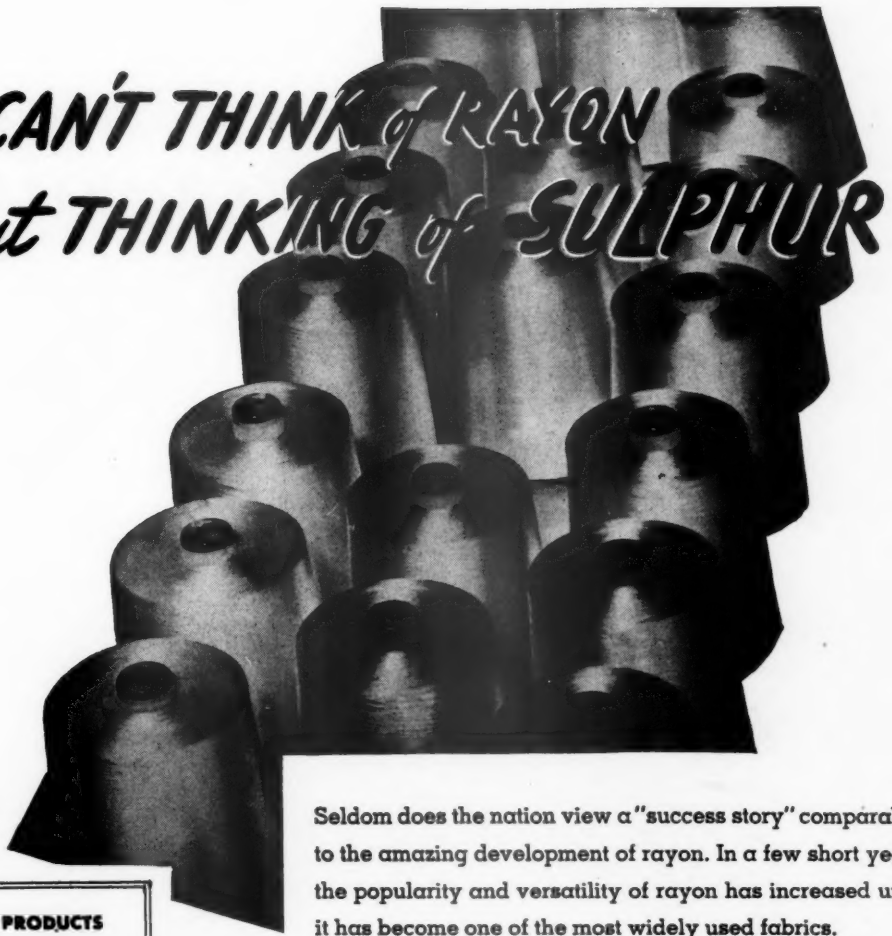
FRED SMITH, coach of the big league Chicago Cubs, is the son and brother of papermakers. One brother is Lester J. Smith, now paper mill manager at St. Regis' Bryant Division in Kalamazoo. Their father is a former superintendent, now semi-retired at Blandin Paper Co.

Promotions Announced In Canadian Boxes, Ltd.

H. C. Pim, vice president and director of Pacific Mills, Ltd., Vancouver, B. C., has been appointed a director of Canadian Boxes, Ltd., Pacific Mills subsidiary in Vancouver, according to announcement by President Paul E. Cooper.

Mr. Pim, who is now sales manager for Pacific Mills, will be director of sales for Canadian Boxes, Ltd. Quentin A. Leitch has been appointed assistant sales manager for export sales and Frank Scott assistant sales manager for domestic sales. Both started as office boys.

YOU CAN'T THINK of RAYON Without THINKING of SULPHUR



Seldom does the nation view a "success story" comparable to the amazing development of rayon. In a few short years the popularity and versatility of rayon has increased until it has become one of the most widely used fabrics.

In the rayon industry, Sulphur is called into active duty at each successive stage. First, it is the principal agent in the preparation of wood pulp. Then, as carbon bisulphide, it acts to solubilize the pulp. After this, as an acid bath, it fixes the threads. Finally, as acid, it helps make the dyes which give rayon its rainbow of colors.

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CLEANING FLUIDS	MEDICINE
DRUGS	PAINTS
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EXPLOSIVES	PETROLEUM PRODUCTS
FABRICS	PLASTICS
FERTILIZERS	PROCESSED FOODS
FILM	REFINED METALS
FOOD PRESERVATIVES	REFRIGERANTS
FUMIGANTS	RESINS
FUNGICIDES	RUBBER
GASOLINE	SYNTHETIC RUBBER
GLASS	SOAP
GLUE	SODA
GLYCERIN	SOLVENTS
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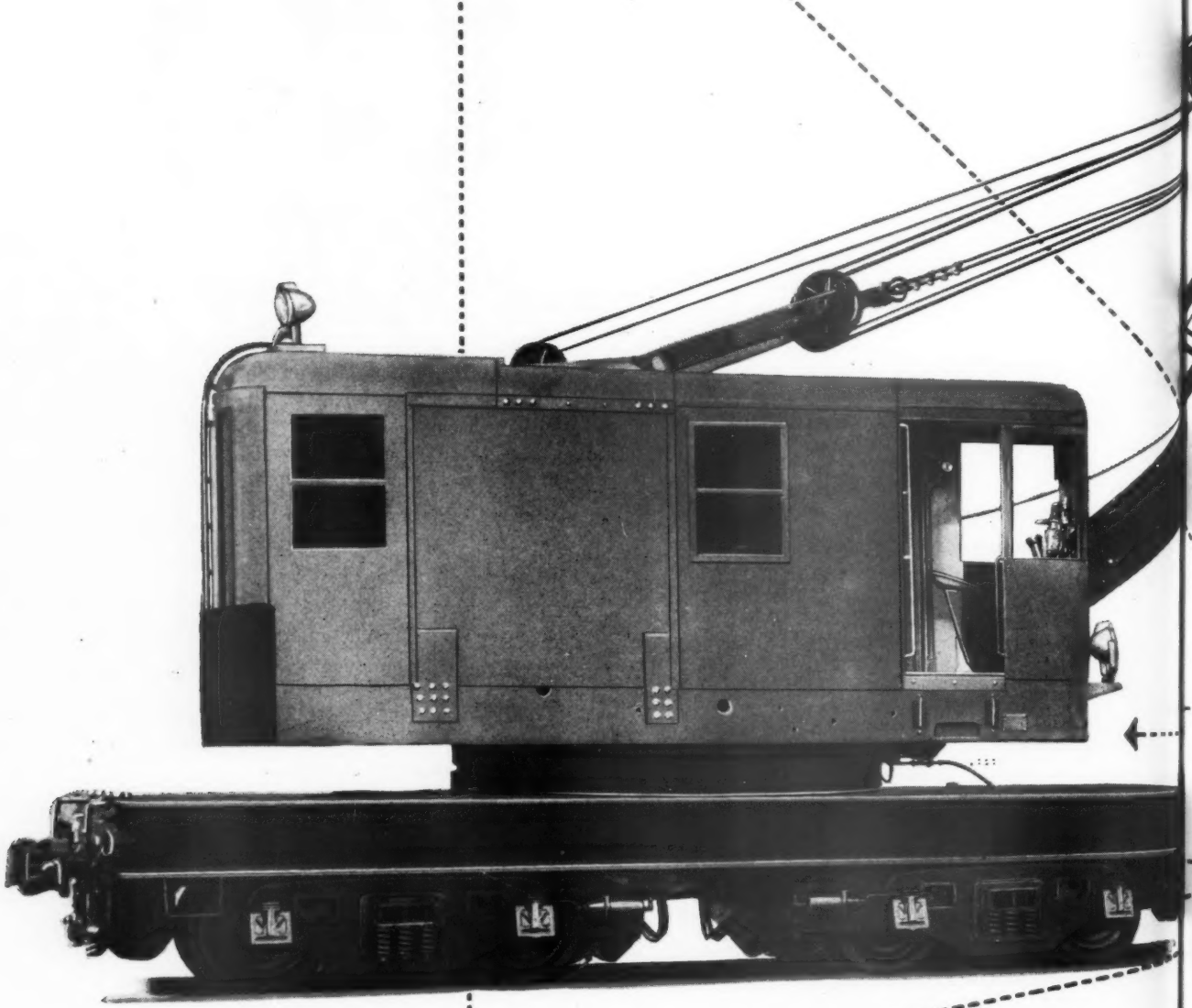
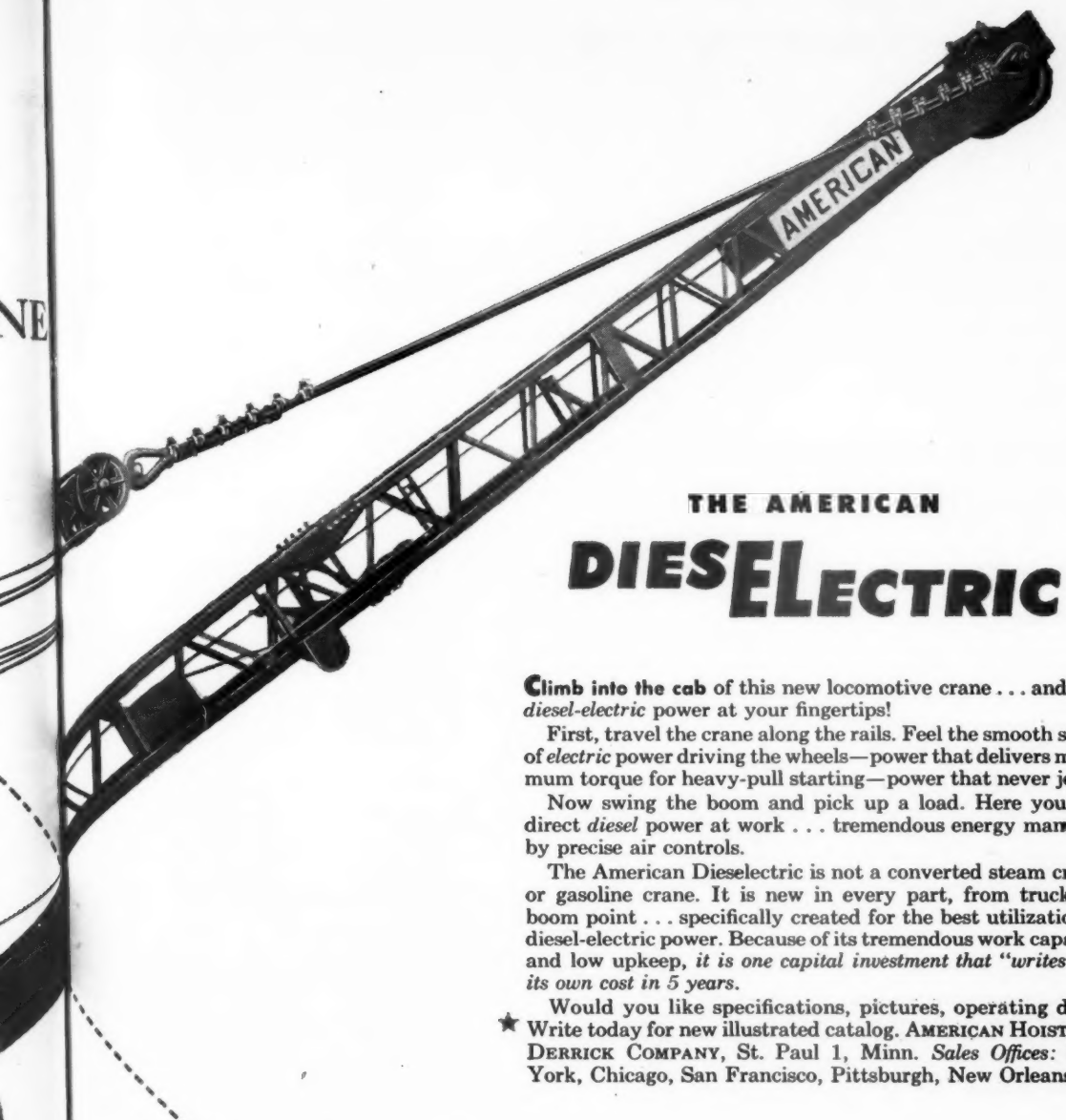


DIESEL-ELECTRIC LOCOMOTIVE CRANE, PATENT NO. 2083480
TOUCH CONTROL PATENT NO. 2370856



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"The most effective way to encourage the growing of trees is to develop profitable reasons for cutting them down."—(A. G. T. Moore, Southern Pine Assn. executive, in 1938).

Engineering Needed in Woods, Say Prominent Industry Executives

Engineering in woods operations is today more important than any other department of engineering in the industry, according to some executives. They are thinking, of course, of the fact that without wood there can be no industry and without engineering progress in the woods, great potential amounts of pulpwood will go to waste or be used for other purposes.

Greatest opportunity for cost reduction in all the operations of pulp and paper mills is in connection with wood production and handling in all its phases, said one prominent Canadian executive.

Wood costs have increased enormously in the last few years and it seems that comparatively little engineering thought has been expended on this important subject in comparison with engineering in the mills. More than one industry leader has urged that all mills concentrate on the problem of wood and, by doing so, accomplish greater savings than in any other way.

Great interest in the Far West, where re-logging or salvage logging is cleaning up the small wood and waste after big timber is taken off, is being shown in the possibilities for using fleets of lightweight, easily maneuvered yarding towers manufactured by Isaacson Iron Works. These portable units are needed to quickly pick up and move in re-logging and towers with adjustable telescopic top sections have been tried.

The difficulty in salvage logging is development of lightweight equipment to do the job. It has never been economic to try to clean up small stuff with the heavy, expensive high lead equipment and high-priced labor which is required in logging the big trees and it still isn't.

New methods of bundling and trucking this small wood and of water transport of bundles are being developed.

Trends in the South

In the South, considerable interest is aroused in a portable pulpwood mill developed by B. L. Montague Co. of Sumter, S. C., and used by International Paper Co., Southern Kraft Division, and Rayonier Incorporated in Florida. R. F. Bower of Rayonier said his mill with tractors with towing winches and wheeled arches and a complement of 17 men can produce 50 to 60 cords a day from tree to loaded truck.

Brunswick Pulp & Paper Co. has developed the use in the woods of loading pallets with upright pipes at four corners. Pallets are left in the woods by trucks, trees are felled and cut to length with portable saws and loaded on them. Three loaded pallets are drawn aboard a truck in ten minutes with winch and cable.

Champion Paper & Fibre Co. is using a Caterpillar with Pacific Car & Foundry Co. (Seattle) winch and a Montague pulpwood portable mill with conveyor in highly controlled selective logging of timber on the famous Vanderbilt plantations near Asheville, N. C., and do such a successful job with this equipment without hurting natural beauty that one of our editors compares it to picking flowers in a park so the superintendent won't miss them.

Also used by Brunswick producers is the Kut Kwick special saw with gas motor, both mounted on two wheels. The saw cuts horizontally in felling and is shifted to vertical position for bucking.

A lot more of these interesting woods devices could be described here. Crown Zellerbach has a walking cane which deposits seeds by gravity when poked in the ground, but also is considering planting from airplanes. There are a lot of "bugs" to be worked out in these woods prac-

PLANTED PINES, 13 YEARS OLD AND THINNED FOR PULPWOOD—Thousands of acres of worn-out farm land can be made as profitable as this plantation in Mississippi. In 13 years it grew 26 cords per acre or at the rate of 2 cords per acre per year. Properly thinned for pulpwood it yielded 7 cords per acre permitting the remaining 19 cords to grow into higher quality products at a growth rate in excess of 2 cords per acre per year. The pulp and paper industry through the Southern Pulpwood Conservation Association recommends planting of pines for profit on abandoned lands.

Humpty Dumpty has been re-assembled

It took considerable doing—this stem-to-stern rehabilitation of Moore & White.

But now it's all over but the shouting, which you may expect to continue for some time.

What do we find to shout about, as we round out our first year under new management? First and foremost, a sixfold increase in business . . . positive proof that the confidence and loyalty of well-served customers is an enduring asset. No less gratifying is the proof that candor and forthrightness pay off in business.

We are doing our utmost to justify the faith of customers—old and new—who took at face value our cards-on-the-table announcement of the rejuvenation of Moore & White. We are better prepared than ever before in our 62-year history to make good on our assurance of finer engineering, production, installation, and servicing of custom-built paper-making machinery.

We're set up, too, to convert "backlogs" into deliveries in a shorter time than you might believe possible.

If you have need of equipment for making paper or similar products, call upon us for the best engineering brains in the industry. We'll tackle your toughest problems . . . come up with the right answer, every time.

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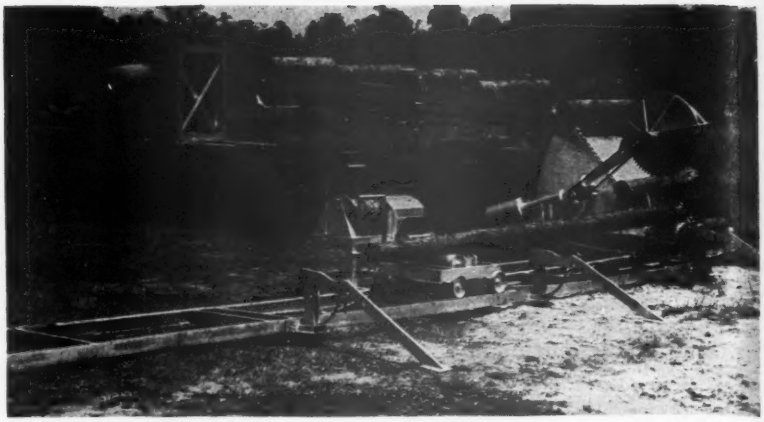
tices, and engineers in equipment companies and pulp and wood producing companies must do it.

Mechanical equipment of all kinds is in urgent demand in nearly all sections of pulpwood procurement and is as yet generally unavailable or, at the best, procurable in extremely limited quantities. The district adjacent to New Orleans recently blamed low pulpwood stocks chiefly to equipment shortages, although it reports a fair supply of trucks. The New England district indicates that scarcity of railroad freight cars as its most acute pulpwood problem, while the Pacific Northwest reports a slight recent improvement in availability of cars released from wheat haulage, but points out that this relief may be only temporary. Elsewhere in the country, the shortage of railroad cars continues a detterent to pulpwood movement.



NEW IDEAS IN PULPWOOD production are embodied in equipment developed by B. L. Montague Co., Sumter, South Carolina, being successfully used in Southern operations such as Rayonier's, Southern Kraft's, and Champion's. In the accompanying article is a brief discussion of its uses. In this picture is shown the Montague Tractor-Mount Pulpwood Harvester, which saws and loads logs in one continuous flow of operation. This seems to achieve just about the ultimate in mobility. Crosshaul, track and log dolly equipment are loaded by tractor onto wheels and towed to site. Equipment is gas-powered.

New Pulpwood Trends in South Improve Future Prospects for Mills

Despite its extensive expansion in pulp mill capacity and regardless of dark views taken because of overall regional timber depletion figures, those who consider the industry as approaching a pulpwood area saturation ceiling in the South will watch in vain for its culmination.

These doleful facts are true: (1) most owners of 122 million acres of Southern forest lands (largely small lot owners) still cut or sell practically every tree that is merchantable when the logger or pulpwood dealer comes around, thus putting themselves out of the supply market; (2) new growth is checked on millions of acres by burning; and (3) steady decline of sawtimber stands (14% from 1935 to 1945) has brought harder industrial competition for these trees, and harder cutting.

In offset to the above adverse conditions, there has been developing two far-reaching trends, according to **PULP & PAPER'S** own "on-the-spot" survey of the situation.

First, the introduction of blending of a small part of southern hardwoods into pine pulp has blossomed into their full fledged use as a raw resource, which will up to double the potential supply of pulpwood.

Second, the advancing application of forest management, in which economics is intimately integrated, will bring to the mills a marked increase in pulpwood from their own expanded fee lands and others equally or better managed.

Of this factor, little need be said beyond recalling that blending of hardwood pulp up to 20% to eke out wartime shortages has given way to full fledged paper production from these species. This usage is even now being expanded, and time will see their full utilization.

International Paper's Southern Kraft Division first converted at their Bastrop (La.) mill; then retrieved one of its Georgetown (S.C.) paper machines with a hardwood pulping plant which went into operation in December, 1946; and the industry has kept pace.

For every acre of pine in the South, there is one of hardwood; and on many acres the stands are intermingled. The adoption of hardwood to paper making comes as a bonanza to Southern mills whose fee lands were purchased on the basis of pine stand values but carry all species.

For a complete understanding of why the pulpwood supply will be expanded to meet the industry's needs, one should turn to Southern forest economics. Before the lumber industry passed its prime in the Great Lakes' states, Southern timber stands were virtually untouched because too remote from markets. In clearing lands, farmers burned fine trees because valueless.

As the lumber industry moved South, early purchasers acquired virgin stands at 50c per acre, and others bought at commensurate levels determined by long rail distances and railroad logging costs. Since more lands were cleared than needed for farming, natural forest regrowth set in. Over in East Texas a development company formed to place farmers on cleared lands tried to suppress new growth; finally gave up and now owns a fine second growth acreage stand running into six figures.

The second growth lands took value only as virgin stands—the source of superior lumber—began to fade. During the 30's the U. S. Forest Service acquired large acreages of high quality quick growing lands for as low as $1.50 per acre.

At the time the Southern pulp mill started to become important, the market for small trees was either very thin or else non-existant. Some company executives believed there existed no need to bulwark a big capital investment in mill facilities with more than a modicum of pulpwood supplying forest lands. An operator just bought second growth timber rights, and cut the stands clean.

Prior to World War II, a pulp mill was considered "fixed" if its fee lands were capable of producing 50% of its pulpwood needs. In 1946, an outstanding forest authority recommended raising of the sights to 75%. There has been extensive forest land acquisition by the industry during the past two years, and some conservative thinkers today believe a mill should insure itself 100%. What has happened?

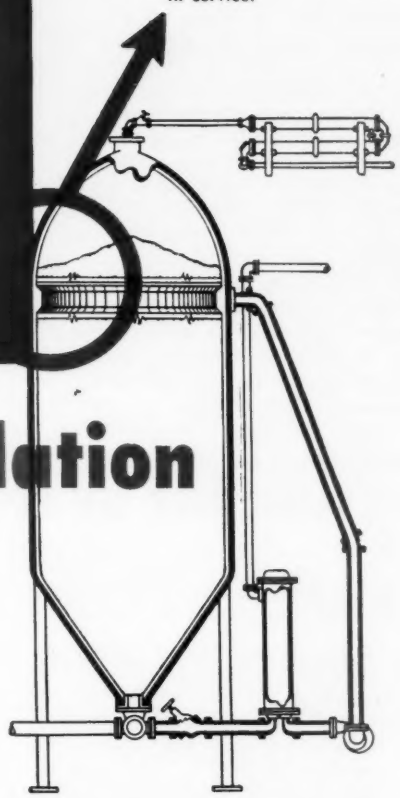
183 Million Acres

The South has 183 million acres of so-called "forest" land. Of this large figure, 18% or 33 million acres are denuded or so poorly stocked as to be ignored until artificially restocked with seedlings.

Pole timber, sapling and seedling sized trees account for 28% or 51 million acres.

The remainder, 54% or 99 million acres are classified as sawtimber area because of having a minimum of 600 feet B.M. per acre in pine and cypress trees of 9-inch minimum diameter, or hardwood species of 13-inch minimum diameter. The average stand is only 3227 feet B.M. per acre, and even with the all-species high

Typical ESCO strainer installation. ESCO strainers built in 1933 are still in service.



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average growth rate of 5.9% has an annual increment of a mere 190 feet B.M. per acre.

If this annual increment were permitted to remain in the woods for a full six-year period the growing stock would expand to 4500 feet per acre, and its increment of 265 feet annually would aggregate 26¼ billion board feet per year, or 1 1/3 billion feet in excess of present combined commodity and destructive drain.

Three decades ago the Southern lumber industry was constituted of a few hundreds of big mills cutting virgin stands on their own fee lands. Today there are over 8,000 portable and semi-permanent mills operating to a large extent on timber rights. Trees are mostly bought on a lump sum basis from owners, and there are many who are willing to log anything that will make a two-by-four.

The plaint of these beavers has been that if any small trees are left, the pulpwood man will come behind and clean off the land. So with the pulpwood dealer and small mill man cutting within the same diameter bracket, or close to it, they have competed assiduously with one another to buy stands, and both have worked indefatigably to remove possibility of early regrowth.

The Forest Service has reported that in the Southern area from Virginia to Texas on 64% of acreage involved in recent cuttings there has been a failure to leave anything merchantable. Partial stands were left 25%; selective cutting 11% of the time.

When woods cutting reaches company land, however, it takes on a different tempo. The pulp company, for instances, hold (1945) 5,379,000 acres but here cutting practices on 77% or 4,141,830 acres was classified as "good or better." On an aggregate of 16,257,000 acres held by lumber companies, 43% or 7,150,510 were cut in the "good or better" practice manner. The Forest Service classified 52% of large ownership forest lands as being cut by selective methods.

This gives the trend in forests. The John Q. Public who takes all he can get today, and the operator who goes right along with him, are in a class, which, as a whole, is cutting itself out of the picture. Visualizing these vanishing stands in the same place as the long-gone virgin stands, we find those who turn to good forestry practice emerge as possessors of an asset the value of which tends to stabilize.

During the depression pulpwood was bought for as cheap as 50c per cord. This low level brought an equivalent opinion as to value of good forest practice. With pulpwood stabilized at around $2.50 per cord, there will be enough produced by good forestry practice to take care of current and future mill expansion.

The Forest Survey places as much as 44,962,000 or 26.9% of the total of 167,028,000 acres of commercial forest in the hands of 2470 owners each having not less than 5,000 acres. These big owners are already reaching for equipment with which to put their acres to work. Southern States are doubling their tree nurseries, and now a seedling planter that can be used with a 3-man crew to put in 12 acres in a day, or 1200 in a season offers a real bid to those who want to pull all of their lands into full per acre production.

Determination of
AMOUNT OF WOOD IN RANDOM STACKED PILE

By W. W. Krauss
Plant Engineer, Brunswick Pulp & Paper Co., Brunswick, Ga.

The Author, MR. KRAUSS, who in writing this article for PULP & PAPER, stressed the point that in the new and increased uses of cranes and grapples for unloading pulpwood at the mills, there is a need for a practical method of quickly measuring random-stacked piles.

As the majority of mills at the present time are unloading wood by crane and grapple; there has been an urgent need for an accurate method of obtaining the amount of pulpwood in a random-stacked storage pile.

A ricked pile of wood is, of course, merely a problem of measuring the height, width, and length of the rick to compute the cubic volume. When pulpwood is unloaded by crane and grapple and thrown into a pile in a random manner, the problem becomes more acute; and a method has to be devised which will take into consideration the numerous variables concerned.

Measurement of a random-stacked pile by any method is only the first step in the solution of the problem. The determination of the cubical contents of a pile of random-stacked wood will not permit the actual evaluation of the amount of wood contained in the pile, unless the "stacking factor" of the pile is known. By "stacking Factor" we mean the number of cubic feet occupied by a unit of wood when piled at random. This figure will, of course, always be larger tthan 168 cubic feet which is the volume of a unit of ricked wood.

To find the cubic content of a unit of wood when it is piled

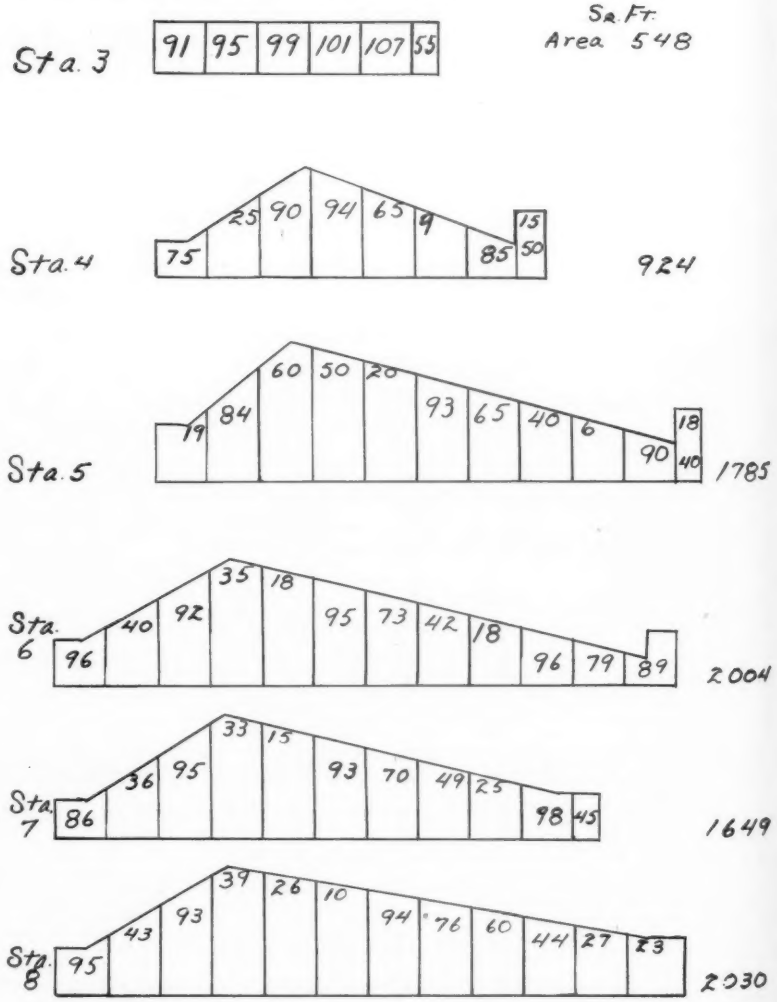

FIGURE 1—A typical graph of station cross sections as used for calculating volume of wood piles.

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Photo Courtesy of Whippany Paperboard Company, Whippany, N. J., April 27, 1947

at random by a crane using a grapple or sling; entails a very detailed and extensive system of measurement; which at its best, can be said to only give a fairly average picture of the piles which are measunred.

Factors Involved in Stacking

So many factors enter into the stacking of a pile of wood by crane that it is physically impossible to stack two identical piles. Some of these factors are as follows:

1. Use of sling to remove wood from truck and place in pile. This keeps the wood at a more dense volume, and approaches the 168 cu. ft. per unit.
2. Use of grapple to remove wood from railway cars. This wood will naturally scatter when dropped on the pile, and thus the volume of a unit of wood stored in this manner will approach the upper limit.
3. The rehandling, or re-casting of wood in the piles will again change the density.
4. The height at which the crane releases the wood above the storage area is a factor in the overall density of a pile.

To intelligently arrive at a stacking factor which can be used with any degree of confidence, it is necessary to measure as large a pile of wood as possible.

Determination of the stacking factor for random-piled wood was determined at Brunswick Pulp & Paper Co. in the following manner. Three large piles of wood were selected for measurement. The amount of wood in each of these piles was known as the piles were made up of wood brought in by truck and the trucks were scaled before unloading by crane. Some of the wood was piled around the edge of the piles in ricks and the center thrown in at random by crane. Every condition to be met at Brunswick was incorporated in the make up of the three piles of wood. From the above description it can be expected that three stacking factors would result from the measurements of the three piles. This proved to be the case. It was decided that a fair factor would best be arrived at if the three piles were measured individually, and collectively, for checking purposes, but that the factor should be calculated from the piles collectively.

How Piles Were Measured

The following method was used to measure the piles:

A base line was run on the North side of the piles, and staked off in segments on ten-foot centers. A 90-degree angle was turned by transit on each end of this 380 ft. base line, and lines run at right angles to the base line. A point was selected on each of these lines, which would clear the piles and the two points connected by stakes. Due to the fact that the original base line and the closing base line were not parallel, the distance between these stakes was 10.6 ft. instead of 10 ft. The stakes were numbered consecutively as station 1 to 39. It was now possible to set up the transit on each of the stations and by turning a 90 degree angle from the base line, run a cross section at ten foot intervals through the entire length of the pile. Measurement of this cross section was mads by measuring the horizontal distance from the base line to the pile. The vertical heighth of the rick was taken at this point. The width of the rick was a constant 5 ft. 3 inches. A Stadia reading was taken at the apex of the pile on the station line, and the angle of deflection was read on the transit. From this angle and the stadia reading, which is the hypotenuse of a right triangle, the heighth of the pile at this point and the distance from the instrument may be calculated (See Figure 1)

Height = Stadia Reading × sine angle plus Height Instrument.

The highest point of the pile and its position with respect to the base line is now known. All the stations on the original base line are measured in a similar manner, and the results recorded. Corresponding stations on the opposite base line which are also numbered from 1 to 39, are now used and measurements made from each station to the base of the wood pile. The angle from this base line may be calculated and turned with the transit to ensure the reading being made on the proper cross section line. The heighth of the rick at each of the stations was measured and recorded.

From the above description, sufficient data are obtained to plot to scale the outline of the wood pile, and the cross section at each of the 38 stations may also be plotted to scale. From these diagrams the cross section area of each station may be calculated by counting the squares in the enclosed figure. The distance between the stations being known, and the area of the station being now known, the volume between these stations may be calculated by the following formula:

$$\frac{A\,1 - A\,2 \times \text{Distance between Station \#1 and Station \#2}}{2}$$

The amount of wood in the pile was known from actual measurements when the cars and trucks were unloaded.

From the calculated volume and the known amount of wood, the stacking factor or density of the pile may be calculated (See Figure 2)

$$\text{Stacking Factor} = \frac{\text{Cubic Feet Volume}}{\text{Units of Wood}}$$

By using the average of the three piles of random stacked wood as measured it was found that a stacking factor was indicated which very accurately determined the correct amount of wood in a pile as stacked at Brunswick.

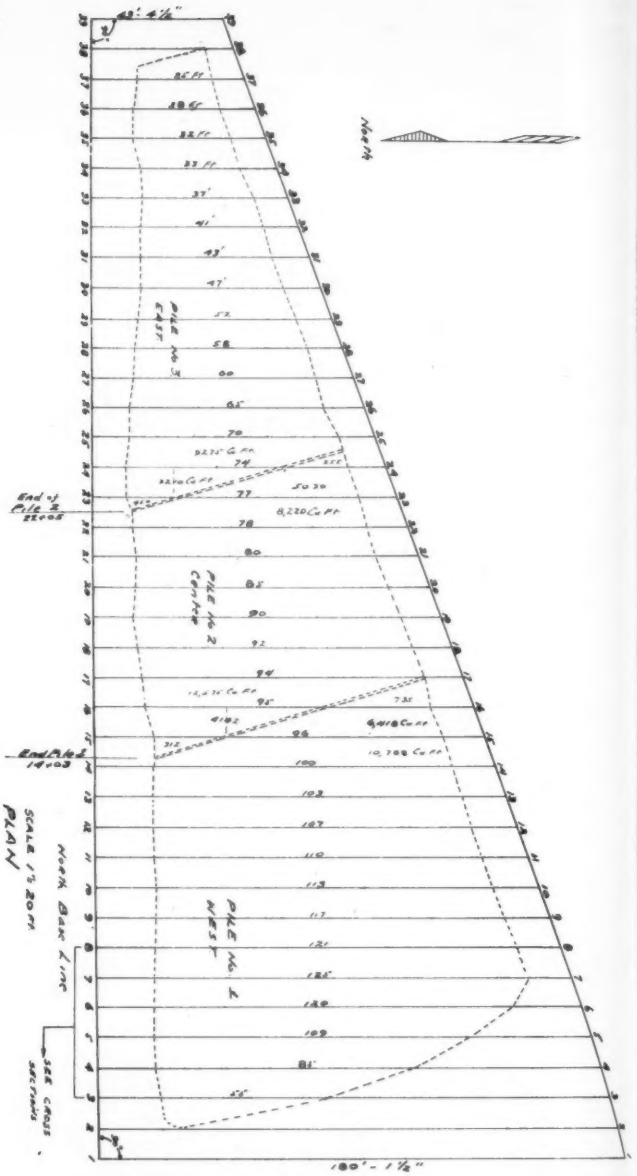

FIGURE 2—Sketch of plan showing general outline of three piled measured, as described in this article, and the method of arranging base lines and cross section lines.

Conclusion

The problem therefore has resolved into a simple measurement of a pile of random-stacked wood by the usual method; calculating the cubical contents, and dividing this figure by, the stacking factor.

Brunswick Pulp & Paper Co. has been using this method of measurement for several years and have found it to be very accurate. As methods of handling and piling wood vary in each section of the country it will be necessary to determine a stacking factor to fit each mill's problem. Once this factor is calculated, however, it will be found very useful in figuring inventories; always keeping in mind that the same method of piling the wood each time must be carefully followed.

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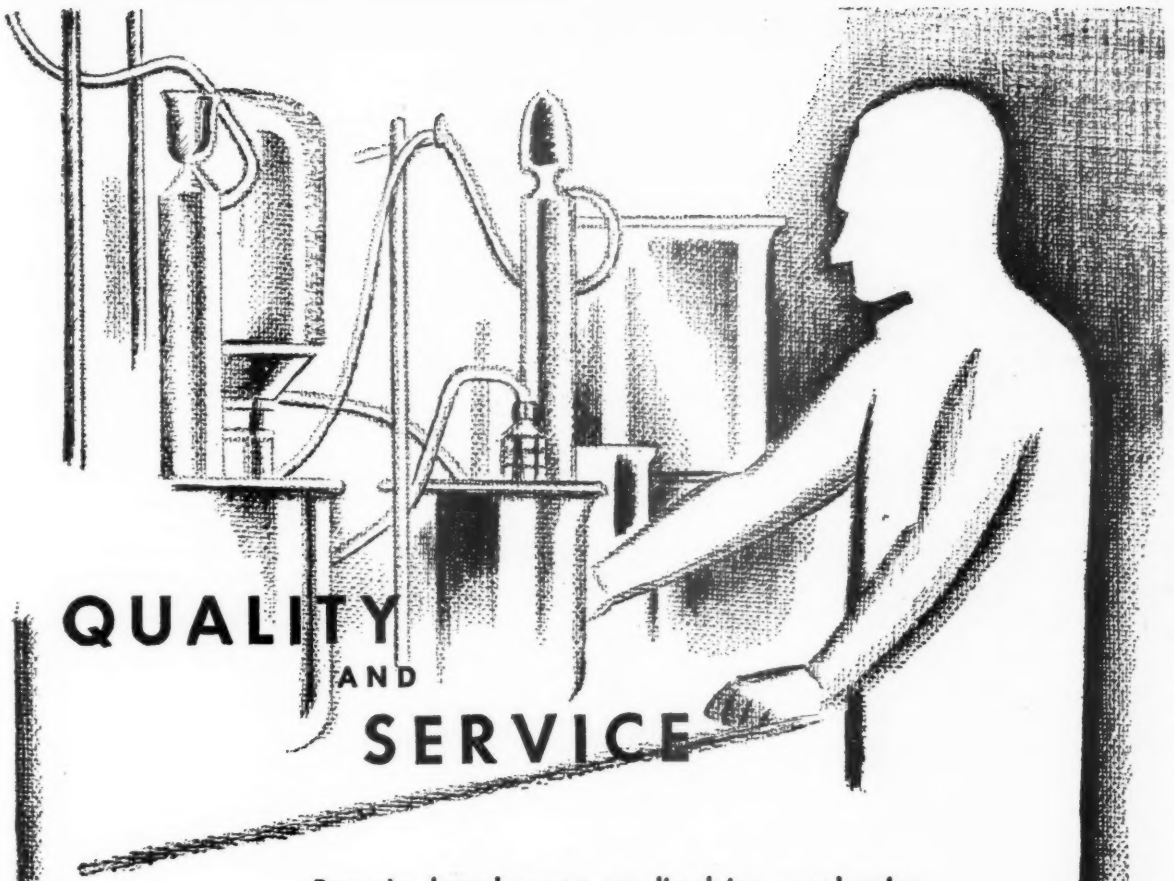

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Vancouver Digesters
MAKE BETTER KRAFT PULP

Pacific Mills, Ltd., already well advanced with a $5,000,000 postwar expansion program, has announced additional expenditure of approximately $550,000 in plant improvements and community development at Ocean Falls, B. C.

The largest immediate individual appropriation, amounting to $130,000, is being made for increasing and improving kraft paper production. The mill's present three 2½-ton capacity rotary digesters will be replaced by new heavy-duty rotating digesters of 3½ tons capacity each. A fourth 3½-ton digester was installed at an earlier stage of the company's original postwar program.

The new digesters are being manufactured in Vancouver, B. C., by Vancouver Iron Works, Ltd., which is becoming increasingly interested in the production of heavy equipment and machinery required by the pulp and paper industry.

The digesters will have walls two inches thick, are 12 feet in diameter and 22½ feet high. Of all-welded construction, they will weigh approximately 30 tons each and, when installed, will be among the largest rotating digesters currently in use in the North American kraft paper industry.

With four 3½-ton digesters in operation, and with certain necessary modifications completed in its screening and beating processes, the company expects to increase its kraft pulp production from a present 140 tons daily to 175 tons. The larger digesters will also permit longer cooking time, which will result in improvement of the quality of the kraft fiber produced.

The two-inch walls, one-half inch thicker than those of the digesters previously installed, will provide additional resistance against the corrosive effects of pulping chemicals and will also allow the use of higher steam pressures in the cooking processes.

The sum of $104,000 has been budgeted for new asbestos-lined aluminum sectional Ross hoods for the plant's two high-speed newsprint paper machines. These operate at 1,200 feet per minute, and produce approximately 80,000 tons of newsprint annually.

The hoods, which will greatly reduce fire hazards in the mill's newsprint section, will also provide more uniform conditions for paper drying. By removing excess vapors they will create pleasanter working conditions for paper machine operators, and will reduce corrosion of the machine room's steel roof members.

Another important factor will be the clean, streamlined appearance of the big paper machines when the hoods are installed. This improved appearance will extend throughout the entire machine room, as the reduction of moisture content in the air will make it possible to paint the whole interior in approved industrial "dynamic" color patterns.

A similar hood is to be installed on the company's No. 4 paper machine, which is producing specialty grades of sulfite and sulfate papers. This hood will cost $28,000.

The Montreal division of J. O. Ross & Co. is supplying the three paper machine hoods.

A noteworthy change in Pacific Mills' present production program will result from an $80,500 conversion job on the company's No. 6 Fourdrinier pulp-drying machine. This machine's production has been confined to sulfite and sulfate machine-dried pulps, but when converted it will also manufacture such coarse grades of paper as .021 and .031 chipboard, core papers and mill wrap.

Previously, these papers have been made on a part-time basis on No. 3 specialty machine.

Expansion at Sonoco

Contract for construction of the building to house the new Fourdrinier paper machine has been awarded by the Sonoco Products Co., Hartsville, S. C. The new structure will adjoin Paper Mill No. 2 and the basement will provide accommodations also for the machine shop.

P. L. McCall, who has been associated with Sonoco since 1919, has been selected to take charge of the new Fourdrinier machine, according to announcement by James L. Coker, president. Mr. McCall has been superintendent of the paper mill for a number of years. In his new capacity he will report directly to Mr. Coker. Until his machine is ready to operate, he will be associated with the engineering department.

R. B. White, assistant production manager, will remain in charge of paper manufacturing for No. 1 and No. 2 mills.

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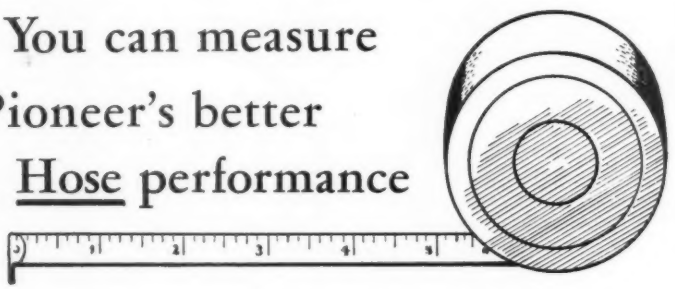

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Some Suggestions Regarding A Mill Welfare Program

Application of an effective welfare program in a pulp and paper organization isn't as simple as it might seem superficially. It can't be rushed into overnight without planning.

This is the belief of Frank Flett, employment superintendent of Powell River Co., Powell River, B. C., which has had a singularly efficient program in operation for many years, but a program that is flexible enough to expand continually in new directions.

Mr. Flett has put in writing some of his thoughts on this important subject of employe relations, and PULP & PAPER INDUSTRY herewith presents them in the belief that they may be of value to other companies.

"The development of a successful welfare program," states Mr. Flett, "demands mature consideration, balanced judgment and analytic forethought. In the multitude of angles that must be considered, weighed and balanced, lurk many a pitfall for the unwary or the single-tracked enthusiast.

"Probably the greatest menace confronting a firm is the bugaboo of Paternalism. And spell it with a capital P because it is a key word in the matter of employe services. It can drown in dismal failure the most generous and sincerely conceived welfare plan. It can boomerang back and reap ill will when nothing but goodwill had been sown. It may look like an orchid to the employer. Too often, it appears as cabbage to the employes.

"Many times an employer has conferred a really generous and honestly presented gift to employes. Maybe a community hall, a swimming pool, a library, or a recreation room. Yet in a short time it becomes evident that it is not appreciated and soon falls into disuse. The employer may, and not infrequently is, criticized and even lampooned for his well meant donation.

"Strange? Not at all. There are reasons for this apparent ingratitude of the worker; and they all focus on the everyday characteristics of people in general and industrial employes in particular. None of us likes being under an obligation to anyone and employes feel the same way toward ther employer. The worker, conscious of his industrial role, has a sense of dignity which is easily offended by any taint of charity, however well intended. He has an inborn aversion to gift horses, and most employes will subscribe to the old truism that nothing is appreciated unless it is earned or worth while unless you have shared in its creation.

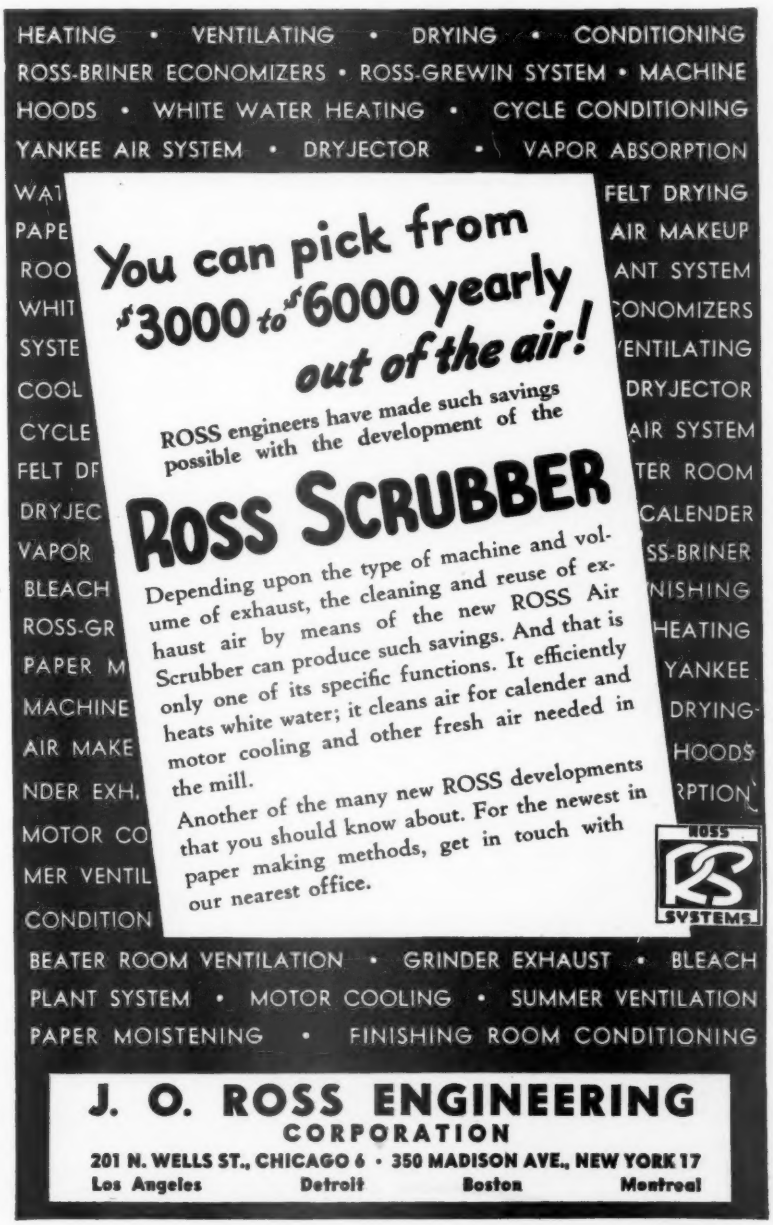
"Such sentiments are based on good, sound character traits—a sturdy independence of spirit. Be careful not to conflict with this spirit in your employes. It should be carefully fostered, and is a priceless asset to industry in these days when the attitude of something-for-nothing is so prevalent, and thousands sit back waiting for the government to do it.

"All of which boils down to one inescapable conclusion—shun paternalism and make your employes partners in your welfare programs. Management must take its responsibilities of leadership, guiding but not dominating—and scrupulously shying away from any hint of 'talking down'.

"Employe service programs should be selective and designed to meet the most vital needs of the moment. There is no point in breaking out in enthusiastic or repentant rash of imposing plans for civic centers or ornate community halls, when the crying need is for a new hospital or expanded pension or health services. A social hall may be a desirable asset, and worthy of your assistance. But probably more employes are wondering what faces them when they are too old to work. Assistance in a contributory pension plan, or the inclusion of dependents in a sick benefit plan might be better appreciated."

British Columbia Mills Tie in with Government

Powell River Co. will embark upon a sustained yield program in cooperation with the British Columbia government by taking advantage of the new forest management license program provided for under recent provincial legislation.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A HAWAIIAN BUSINESS DELEGATION made a two-week tour of the Pacific Northwest as guests of 14 Oregon and Washington Chambers of Commerce just at the time when the U. S. Congress was beginning to take up seriously the question of making Hawaii the 49th state. The party of 25 business executives spent two weeks on the U. S. mainland, highlights of their tour being visits to two paper mills—The Everett Pulp & Paper Co., Lowell, Wash., and Longview Fibre Co., Longview, Wash., the first, a soda pulp and book paper mill; the second, a kraft pulp and paper operation. Here is the party shown at Everett Pulp & Paper Co. Designed by numbers in the picture are: (1) Mayor Henry Arends of Everett, city of three big mills in this industry; (2) W. J. Pilz, Pres. and Gen. Mgr., Everett Pulp & Paper Co.; (3) John Cannon of Kenworthy Truck Co., Seattle; (4) Charles A. Kauhane, member of Hawaii's House of Representatives; (5) Lee Wills of Kenworthy Truck Co.; (6) Judge Samuel Kemp, Chief Justice of Hawaii, and (7) Paul H. Anderson, Chairman of the Hawaiian Chamber of Commerce Tour Party.

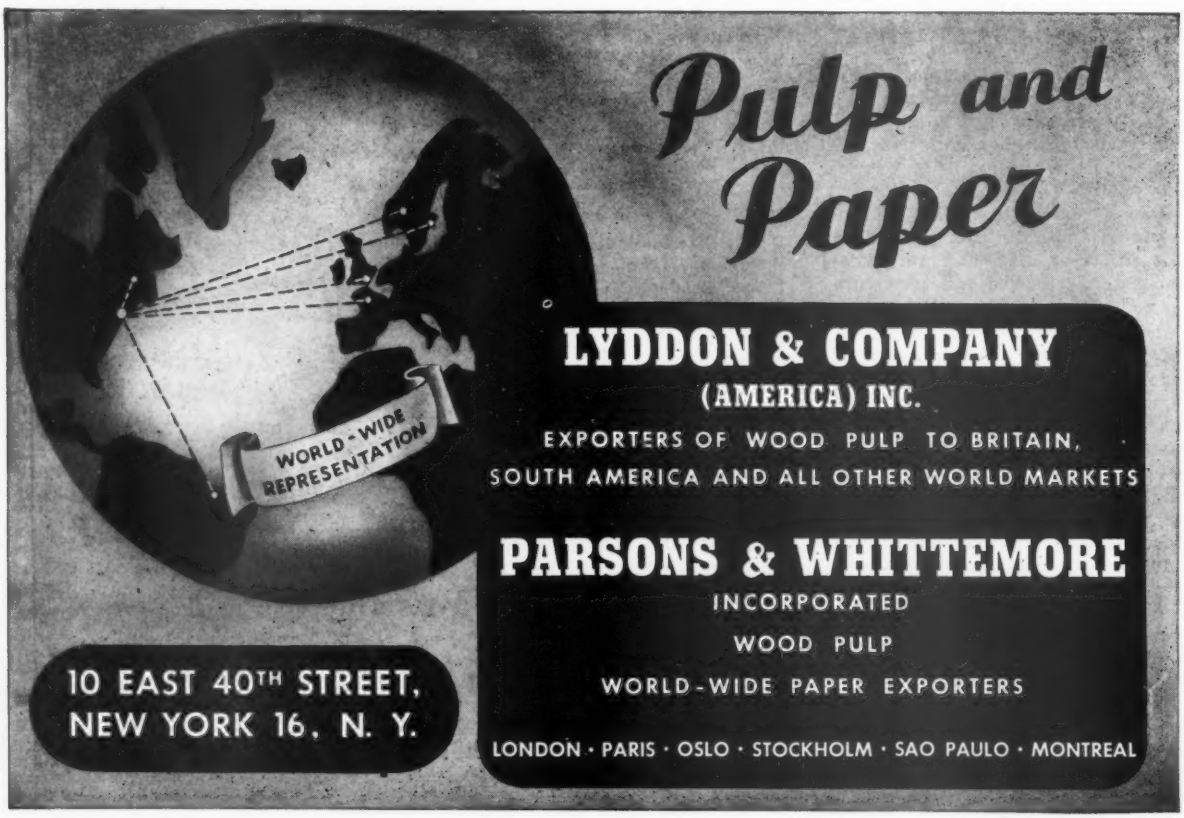
"Operation Cordwood"—First B. C. Farm Wood

While Powell River Co. will probably continue for many years to obtain the bulk of its pulpwood from its own extensive stands of timber along the British Columbia coast and in the Queen Charlotte Islands, the organization isn't missing any bets to collect pulpwood wherever it's available.

Three years ago, it will be recalled, Powell River Co. was the first organization in the industry to experiment on a fairly large scale with the salvaging of small logs from areas that had been logged primarily by standard equipment. This experiment was carried on at Ladysmith, B. C., in partnership with Comox Logging & Railway Co. and the British Columbia government, and it developed many new ideas regarding the bundling and transportation of small logs. The company didn't expect the experiment to yield a quick profit, and it didn't; but it was worth-while pioneering effort and it provided the company's technical staff with valuable data.

Basically, the policy of the company has been to get pulpwood wherever it can be found and economically harvested, handled and transported to the mill, whose capacity for small logs has been greatly expanded as a result of the new facilities at Powell River, where in addition to a Weyerhaeuser type hydraulic barker, a smaller barker has been installed.

Latest development of this policy has been the initiation of what George O'Brien, vice president of Powell River Co., timber activity, calls "Operation Cordwood." This involves the collection by truck of wood cut to cordwood lengths in the lower mainland of British Columbia by farmers and wood lot operators and its transportation, by bundle, on barges to Powell River. Trucks collect the bundled cordwood at various points along the highways, dump their load at Barnet on Burrard Inlet, where it is hoisted on scows or barges and towed to the pulp mill.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Personals

RALPH KILLAM, acting treasurer and son of the president of B. C. Pulp & Paper Co., Vancouver, B. C., planned to leave San Francisco late in August for Japan as one of a small delegation of Canadian businessmen and industrialists making a survey of economic conditions in Japan.

ANSON B. MOODY, vice president of Everett Pulp & Paper Co., recently made his first long voyage in his new 55-foot yacht Haida, taking his family to the romantic Gulf Islands of British Columbia with a stopover at their summer home on Orcas Island. He chose a British Columbia Indian name for his boat.

JACK McMULLEN, personnel manager for the Pacific Coast Paper Mills, broke his wrist in a fastball contest with the Bellingham (Wash.) Lions Club team. He played as catcher. Harry Binzer, secretary of Puget Sound Pulp and Timber Co. was recently elected second vice president of the same Lions Club.

DAN ROBBINS, assistant plant engineer at Puget Sound Pulp & Timber Co., and who belongs to one of the best known paper mill families in Ohio's Miami Valley, turned his Lake Whatcom home (near Bellingham, Wash.) over to a picnic of 80 members of his mill's office, supervisory and lab staffs.

SIDNEY COLLIER, assistant superintendent of the Puget Sound Pulp and Timber Co., drove his new car from Bellingham, Wash., to Los Angeles and return. In the South, he called on his brother, Robert, who is in the paper ruling business in Hollywood. Mrs. Collier and their two sons made the trip. Glenn Trout, shipping foreman at the same mill, picked up a new car in Detroit and drove to New York and Texas.

PAUL FLINT, with past experience in similar positions with mining concerns in Montana, has joined Coos Bay Pulp Corp. (Scott Paper Co.) at Anacortes as accountant in the mill office.

CARL OLSON is general manager of the new Standard Gypsum plant built at Long Beach, Calif., where an 85-inch cylinder machine with capacity for 35 tons is adding to production of that company. Claude E. Harper is assistant general manager, John V. Pooler is plant superintendent, Bryce Simpson is office manager and F. F. Richards is sales manager.

JESSE R. LEWIS, superintendent, Anacortes, Wash., division, Coos Bay Pulp Corp., has started his third year as a member of the Anacortes school board.

OLIVER UNITED FILTERS, INC., with large factories in both Hazleton, Pa., and Oakland, Calif., is carrying out an extensive plant expansion program at Hazleton.

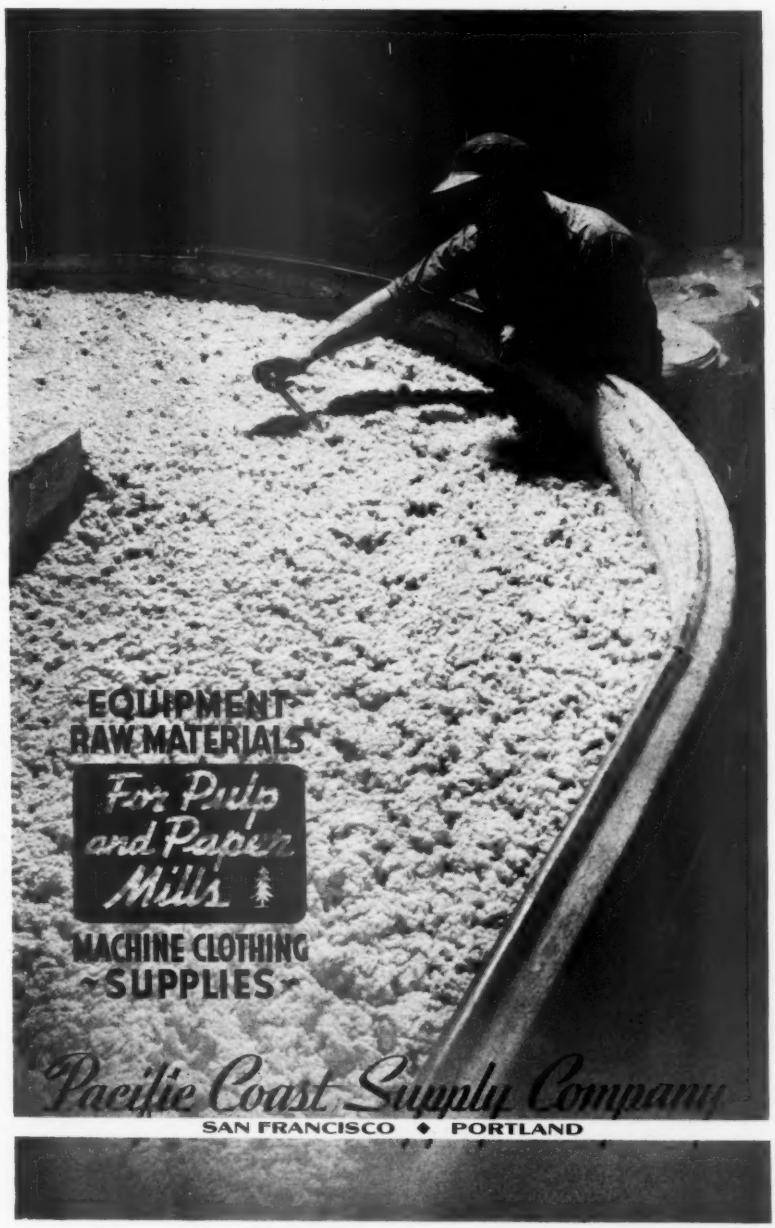
JOHN KIRBY, general chairman of the Paper Mill Men's Hi-Jinks, announces his committee chairmen as follows:

L. A. (Bill) Gardiner, Nekoosa-Edwards, vice-chairman; M. K. Rawlings, National Paper Products Sales, chairman sweepstakes, with B. E. Calhoon, Marathon Corp. as assistant; J. C. Layton, Towlsaver, finance; Tom Meyers, Atlas Paper Specialties, golf; Roland Wolf, California Cotton Mills, assistant; Charles E. Jones, Western Package Service, entertainment; Robert E. Pentz, Continental Bag Specialties, door prizes; Harry Huntsman, Western Waxed Paper, program; Paul May, Pomona, Paper Products, softball; Raymond J. Sterling, R&R Paper Converters, arrangements; J. Dwight Tudor, Independent Paper Box Mfg., greeters. The party wil be at the Riviera Country Club Sept. 19.

HARRY BAMFORD, for several years at Ocean Falls, B. C., with Pacific Mills, Ltd., has been appointed groundwood superintendent for Westminster Paper Co.'s groundwood mill, in New Westminster, B. C., which is expected to be in production some time next November.

ALASKAN COPPER AND BRASS CO. opened an office at 539 Pittock Block, Portland, Ore., Aug. 20 to render service to customers in the Columbia River and Oregon territory. E. O. "Red" Carothers is in charge of the office. The company is distributors of copper and brass and stainless steel in all commercial forms. This office also represents Alaskan Copper Works, fabricators of copper and stainless steel.

SENT ON REQUEST—Bulletin M-3 on "Permanent Magnet Separators" of The Bauer Bros. Co., 1771 Sheridan Ave., Springfield, Ohio, illustrates and describes Triple - Air - Gap and Single-Air-Gap magnetic separators for spouts and chutes and Portable Magnetic Separators for conveyor belts and picking tables. Special types for dementalizing liquid products or bulky materials.



It runs in the family . . .

Ever since the days of ancient Egypt, paper making has been largely a family art, passed along from fathers to sons, from generation to generation. Even today in many of America's most important paper and board mills the top executives are men of advanced age, who learned their trade from their fathers and who now take pride in the fact that their sons will succeed them.

Not a few of those "old-timers" found Hamilton Felts on the machines at which they began their careers. Those felts had been made by the grandfathers of the skilled craftsmen who are now "key men" in the Hamilton organization. Their sons are in line for their places.

The knowledge, experience and skill of generations are your assurance that there will always be a Hamilton Felt that will do your work better, faster and at lower cost.

SHULER & BENNINGHOFEN
HAMILTON, OHIO
Miami Woolen Mills, *Established 1858*

Hamilton Felts

ANOTHER FIRST
for
SUMNER

WE are privileged to announce that we now have the right to build the

"BELLINGHAM-Type" BARKER,

first developed and placed in operation at their Bellingham (Wash.) plant by the

PUGET SOUND PULP & TIMBER CO.

This hydraulic BARKER has already received wide acclaim and recognition, on an international scale, from the foremost authorities in the pulp and paper field; and we are proud to also announce that we already have orders to build TWO more "BELLINGHAM - Type" BARKER units and more orders are in the offing.

If you bark round logs from 4″-72″ diameters, 8′-20′ lengths, then you will want to know all about the

"BELLINGHAM-Type" BARKER!

We can provide all the data required.
Phone, wire or write us today.

SUMNER IRON WORKS
Since 1892
EVERETT, WASHINGTON
In Canada: CANADIAN SUMNER IRON WORKS, VANCOUVER, B.C.

Logging Starts In National Forest

Logging has already started in the national forest timber bought by Hawley Pulp & Paper Co. of Oregon City, Ore. This timber, located near the Oregon coast in Tillamook and Lincoln counties between Otis Junction and Neskowin, is being logged experimentally by Hamilton Bros. of Rockaway, Ore., under a U. S. Forest Service plan to determine the best logging practices as far as forest management is concerned.

This timber sale, made early in July, involves 7½ million board feet, of which western hemlock is the principal species with a lesser quantity of spruce and Douglas fir. The area is sufficiently large to anticipate specific objective advantages of the various types of logging, which will include the following: Tree selection of two types—cutting the under-story suppressed material which can normally be expected to be suppressed to the extent that it will die, and cutting by the crop tree method, involving picking out good crop-tree specimens in each site and thinning the immediate upper story area adjacent to produce favorable growing conditions for the selected crop tree; strip cutting, with strips running both north-south and east-west to determine what effect such practices will have on adequate reproduction and loss by windfall; and a staggered area selection to take advantage of topography.

MORDEN MACHINES CO. of Portland, Ore., has appointed Union Machine Co. of Fitchburg, Mass., as sales representative for the Morden "Stock-Maker" in the northeastern states. In addition, Bowmall & Co., Inc., of New York, has been appointed Morden sales representative in Mexico and Cuba.

OSCAR OF INDUSTRY will be awarded Oct. 10 in a New York banquet to one of these companies for issuing the "best" 1946 annual report (these were cited for excellence in a survey of Financial World and chosen as "finalists" in the paper industry): Brown Co., Crown Zellerbach Corp., Hammermill Paper Co., Hoberg Mills, International Paper Co., Kimberly-Clark Corp., Marathon Corp., Mead Corp., Nekoosa-Edwards, Oxford Paper Co., Riegel Paper Corp., St. Regis Paper Co. and West Virginia Pulp & Paper Co.

MASTER MECHANIC for roofing felt mill, operating two cylinder machines. Give personal data and experience. Address Box 46, Pulp & Paper Industry.

Technical graduate (B. Sc Chem.)—13 years experience all phases, pulp and paper manufacture, research, development, control, operation—now employed, desires better position. Qualifications to assist manager. Reply Box 49, Pulp & Paper.

Stebbins was there

The excerpts shown from the Finch, Pruyn & Company article in the June Pulp & Paper Industry are news now, because they tie Stebbins' name with a mill's unusual changeover to higher quality papers.

All tile work in the modern screen layout is by Stebbins.

All chests and vats are Stebbins tile-lined

the deckers, tiled by Stebbins,

PULP & PAPER INDUSTRY June 1947

For 63 years Stebbins has been allied with pioneering and development work in the pulp and paper industry. It is the thoroughness of Stebbins research and development that accounts for the fact that 80% of all chemical pulp made on this continent at some stage of its manufacture is processed in equipment built or lined by Stebbins.

Consult Stebbins on your next lining or tile tank job.

SEMCO

Stebbins Engineering Corporation

TEXTILE TOWER SEATTLE 1, WASHINGTON

GENERAL SUPERINTENDENT

Eastern Pulp and Paper Mill needs capable, executive type of General Superintendent with demonstrated ability to manage and supervise. Prefer experience in Groundwood Specialities or Book Papers. Excellent opportunity with a growing progressive Company. In reply, please state complete details as to age, education, and experience. Address reply to Box 47, PULP & PAPER, 71 Columbia Street, Seattle 4, Wash.

WANTED:
ENVELOPE ADJUSTER

Experienced on SMYTHE Rotary open end Die Cut Envelope center seam machines. Factory located in Texas. State age, experience, salary required. Reply Box 48, Pulp & Paper, 71 Columbia Street, Seattle 4, Wash.

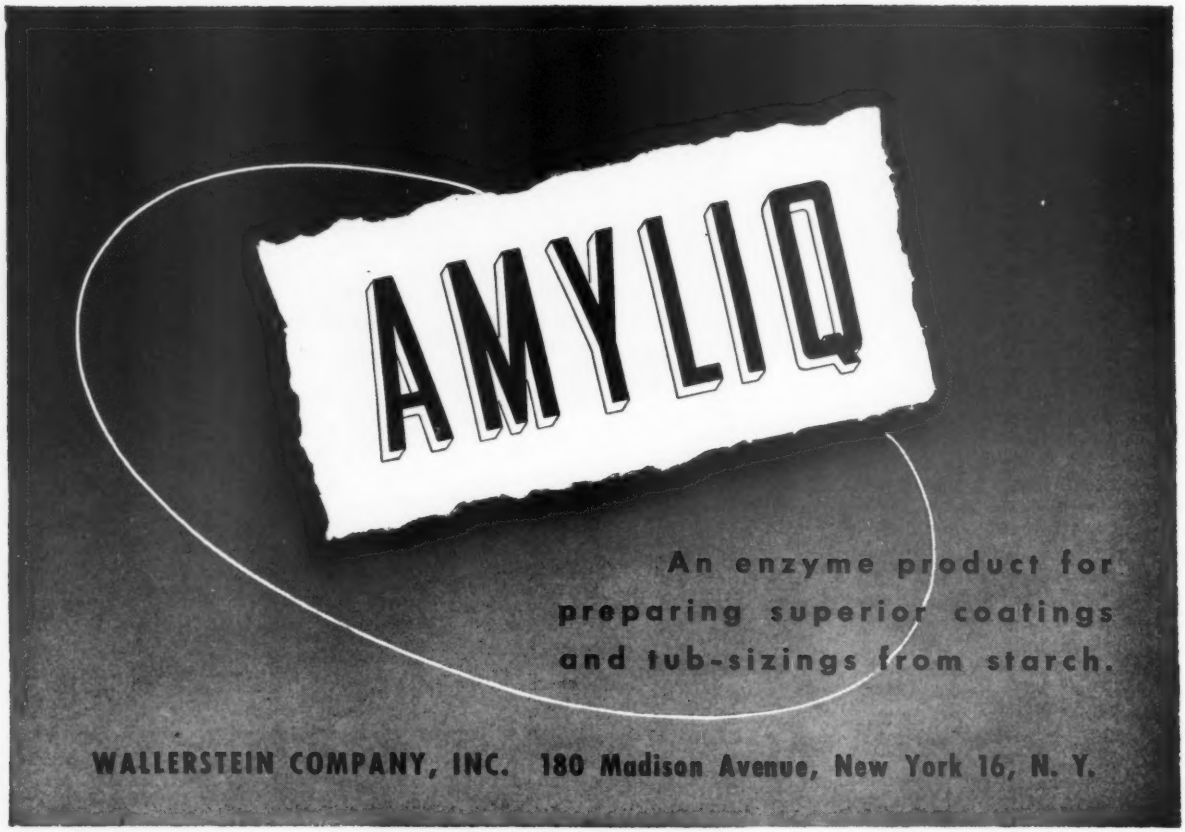
WANTED—THIN ROLLS PAPERBOARD—3 inches or more, or full with. 10 to 18 points thick. Manila, sulphite, cupboard, pattern, colors. Reply: Standard, 65 Duane St., New York 7, N. Y.

MORE people using MORE power than ever before

The number of customers served by Puget Power has increased 64,076 or about 33⅓% since 1940. This was accomplished in spite of war and postwar shortages. Yes, and we are still in short supply of skilled manpower and critical materials. Further, most of Puget Power's old customers are now using more electricity than ever before. For example, even though new appliances have been extremely scarce during most of this period, the average home and farm today is using over TWICE as much electricity as in 1940.

PUGET SOUND POWER & LIGHT COMPANY

FRANK McLAUGHLIN, President


AMYLIQ
An enzyme product for preparing superior coatings and tub-sizings from starch.
WALLERSTEIN COMPANY, INC. 180 Madison Avenue, New York 16, N. Y.

New Use for Lignin

A new use for lignin has been developed, in which this by-product obtained in chemical wood conversions helps to recover silver from certain waste materials, according to Timber Engineering Co., 1319-18th St. N. W., Washington, D. C.

Among metals difficult to recover in solutions, silver is outstanding. Silver salts are used in photographic processes, and they have to be dissolved in the photographic development operations. This is done by means of chemicals which convert silver into a particular state of complex compounds. They are called complex because the silver is enveloped by the dissolving chemicals so that it does not exhibit its usual chemical reactions. Not only are the usual reactions of the silver masked, but its concentration is low, and an overwhelming amount of other chemical substances accompanies the silver in the solutions. Lignin is capable of collecting the silver even from such complicated mixtures. The lignin combines with the silver by chemical and physical attractions so that it becomes easy to remove it in a highly concentrated and greatly pre-purified form.

The lignin has to be prepared in a specific manner before it displays this specific attraction of the silver. Its activity is restored by the action of alkalies. The change can be observed without any complicated apparatus. The lignin of this more active form, when added to the silver-containing photographic spent solution, combines with the silver and carries it down into a precipitate. All the sliver that was contained in, say, one gallon of such a solution is then concentrated in about 2 ounces of precipitate, which can be separated by simply pouring off the supernatant water solution. Drying concentrates the silver still further and by burning away the lignin, the silver is recovered in a form in which it is ready for refining, converting into salts, or into pure metal.

In a similar manner, lignin can be prepared to perform with other kinds of waste solutions containing silver or solutions containing other metals.

Cut for Britain

Consumption of newsprint in the United Kingdom, now only about one-third of its pre-war level, is expected to be reduced another one-fifth as a result of import cuts designed to conserve Britain's dwindling supply of American and Canadian dollars.

A dispatch to the New York Times reports that effective July 7 the price of newsprint in London was raised about $28.50 a ton. British newspapers were previously paying about $120 a ton, or three times the pre-war price.

Largest Producer In Brazil is Klabin

Largest pulp and paper enterprise in Brazil is Industrias Klabin de Parana de Cellulose S. A. Parana. Wood pulp is made from Parana pine. Actual production figures for this company are not available, but the annual capacity of the plant with present facilities is approximately as follows (in metric tons):

Bleached-Unbleached sulfite	35-40,000
Unbleached kraft	5,000
Mechanical pulp	25-30,000
Newsprint and board	40-45,000

There will probably be an increase in groundwood and wood pulp production of about 20,000 metric tons when the full pulp capacity is utilized. Klabin has also a paper mill in Sao Paulo which can use more than half of this additional pulp capacity. The remainder of this pulp could be sold to other Brazilian paper mills. The fact that imports of groundwood and wood pulp were subject to import license after June 26, 1945, protects this domestic production. Licensing of imports, however, is purely a formality up to the present time.

At the present time, Klabin's Parana mill is only making unbleached sulfate, about 200 metric tons per month. This pulp is used for making sack paper at the Sao Paulo mill under license with Bates Valve Bag. Consumption of wood pulp in this plant is about 400 metric tons a month, the difference being supplied from imports. The sack paper manufactured from Parana wood pulp.

It is difficult to say when the Parana mill will attain full capacity production, for this is being held up pending completion of the hydroelectric power station.

New Eastern Plant Acquired by Fibreboard

Fibreboard Products Inc., San Francisco, has announced that, as of June 1, 1947, the Columbia Paper Box Co., Washington, D. C., manufacturer of folding and set-up boxes, was acquired by the Maryland Container Co. Division of Fibreboard, Baltimore, Md., according to D. H. Patterson, Jr., president.

This places Fibreboard in the folding and set-up box business in the East. The newly acquired facilities will be operated as the Columbia Paper Box Division of Maryland Container Company.

R. R. Clow will be vice president in charge of folding and set-up box (Columbia) division and F. P. Close will be vice president in charge of the corrugated division of Maryland Container Co.

Other officers of Maryland Container Co., Inc., Baltimore, Md., are: President, D. A. Patterson, Jr.; vice president B. P. Altick; secretary, V. C. Hobbs; and treasurer, J. F. Garvin.

Another division of Fibreboard Products in the East is Federal Container Co., Philadelphia, Pa., manufacturer of corrugated boxes.

New Freeze Container For Cheap Orange Juice

A wax-impregnated fiberboard container with metal ends holding 15 fluid ounces of frozen orange juice will soon make possible the home delivery by dairymen along with other dairy products. The package will be delivered in thawed or semithawed condition and should be treated "as if it were a bottle of milk."

The supplier, the Cal-Grove Products Co., Covina, Calif., claims that ti will be able to merchandize the frozen orange juice at a lower figure than the price of fresh oranges which the user squeezes himself.

HENRY H. WILLIAMS (left), new Executive Vice President and CHARLES H. VICKERY, new Sales Manager, as announced by S. H. Jones, President of E. D. Jones & Sons Co., Pittsfield, Mass., manufacturers of paper-making machinery.

Mr. Williams has served as Vice President in charge of sales for the past eight years; Mr. Vickery, as Sales Engineer. Mr. Williams became associated with E. D. Jones & Sons Co. in 1910 and has been a director of the company for 15 years. Mr. Vickery attended the Clarkson College of Technology. He became a draftsman with E. D. Jones in 1929 and a year later was promoted to salesman, covering northeast U. S. and eastern Canada. Recently his territory has included the Pacific Coast.

D. E. EICHELBERGER (left), Vice President of American-Marietta Company of Chicago, is the new Resident Manager of the firm's Pacific Northwest operations, which includes its Adhesive, Resin and Chemical Division and Schorn Paint Manufacturing Company, both with plants in Seattle. He succeeds the late E. Emerson Brott. JACK E. DYKSTRA (right), also a Chicagoan, is the new Sales Manager for Schorn Paint Manufacturing Company with plant and offices in Seattle. He was formerly with Sherwin-Williams. American-Marietta bought the Adhesive Products Co. of Seattle in 1946.

American Marietta will extend operations into Canada when new plant at New Westminster, B. C., is completed.

Fall Book Market Is Looking Better

At the summer's beginning, book publishers were complaining strongly that higher and higher production costs were heading them toward bankruptcy. That part of the paper industry serving the book industry looked on with trepidation. Now there is better news. Summer book sales have been surprisingly high.

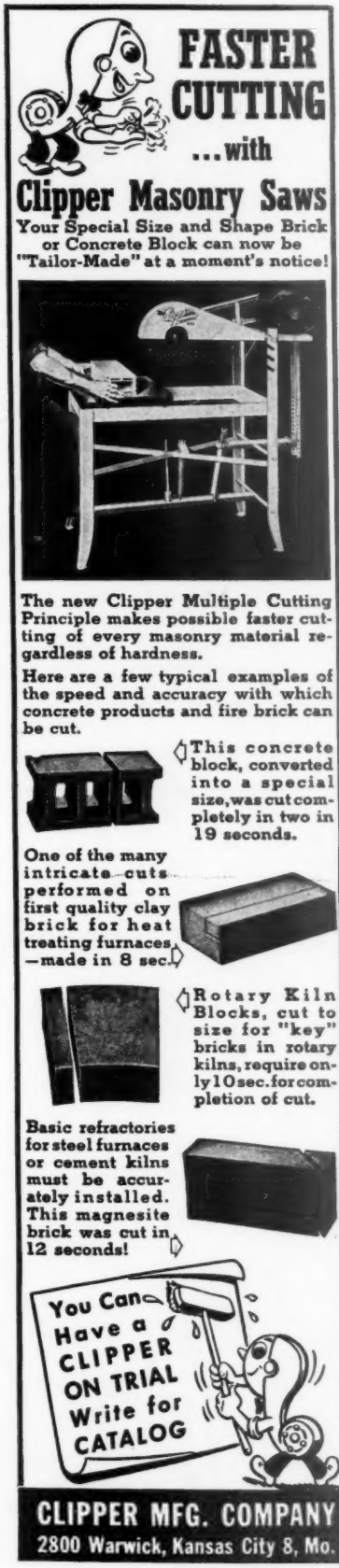
Judge Raymond Tiffany, attorney for the Book Manufacturers' Institute, in New York said last month: It is true that costs have risen over 50% since 1941—but book manufacturers are doing more research than book publishers toward cost cutting. Publishers, said he, should be out stirring up more outlets. The judge pointed out that in the U. S. there are 6,000,000 new families since 1939, most of them in the $3000 to $5000 income class.

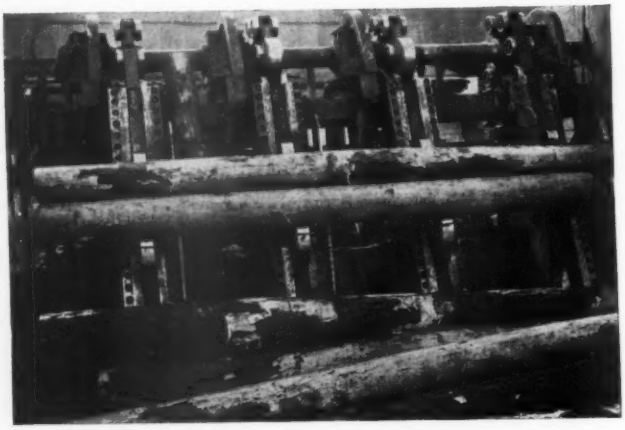
Meanwhile, New York and Philadelphia publishers reported their fall business looking better than that of last spring.

Russian-Finnish Agreement Details

Full details of the Finnish-Russian agreement relating to utilization of former German assets of 6 billion marks have become available in a Finnish publication which has just reached this magazine. Under it Finland is to supply to Russia considerable quantities of pulp, paper, lumber, plywood and ethyl alcohol. Following are tonnages of pulp and paper to be sent to Russia during 1947 and 1948—in most cases half each year:

	Tons
Bleached sulfite pulp	2,000
Dissolving sulfite pulp	2,000
Unbleached sulfate pulp	16,000
Newsprint	20,000
Corrugated board	2,000
Egg packaging	2,700
Gummed paper	200
Candy paper	200
Copy books	1,000


FASTER CUTTING
...with
Clipper Masonry Saws
Your Special Size and Shape Brick or Concrete Block can now be "Tailor-Made" at a moment's notice!
The new Clipper Multiple Cutting Principle makes possible faster cutting of every masonry material regardless of hardness.
Here are a few typical examples of the speed and accuracy with which concrete products and fire brick can be cut.
This concrete block, converted into a special size, was cut completely in two in 19 seconds.
One of the many intricate cuts performed on first quality clay brick for heat treating furnaces —made in 8 sec.
Rotary Kiln Blocks, cut to size for "key" bricks in rotary kilns, require only 10 sec. for completion of cut.
Basic refractories for steel furnaces or cement kilns must be accurately installed. This magnesite brick was cut in 12 seconds!
You Can Have a CLIPPER ON TRIAL Write for CATALOG
CLIPPER MFG. COMPANY
2800 Warwick, Kansas City 8, Mo.



Discharge End, 2 logs being kicked back

ORRMELL LOG BARKER

NOW BARKING DRY PINE LOGS
16′ FT. L. UP TO 38″ D. FOR
SOUTHERN SAWMILL
CONVERTING SLABS
INTO PULP

CAPACITY: 25 CORDS PER HR.
16′ logs dry barking

POWER: 150 H.P. MOTOR

SIMPLE OPERATION, one lever only, logs in the open

TAKES ANY LOG FOR ANY CHIPPER
NO WATER ADDED TO THE BARK

FIBRE MAKING PROCESSES, Inc.

Russ Building, San Francisco 4 — Tribune Tower, Chicago 11

the standard of comparison . . .

Photo by Ray Atkeson

CRATER LAKE
AND
Griffith
MIGHTY TOUGH
RUBBER COVERED ROLLS